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CONTENTS.

Agricultural.

WHAT A DROUTH TEACHES.

Nature has a good many ways of doing things that are not just as our short-sighted wisdom plans. After a severe drouth, when every plant exhibits its distress, by drooping stems and dead leaves, we rather expect the rains to supply everything that is lacking, and that growth will begin at once. It is true the stems of grains will each assume an upright position and change color somewhat, but they will not begin at once to grow. There must be some underground change effected before the machinery can be set going under the changed conditions. The plant takes in sail as it were, underground and above, so that the little moisture left in the soil may eke out the life of the plant, until the supply becomes more bountiful. Then new rootlets must be formed, the ducts and passages become enlarged, and the whole root system rearranged to conform to the new conditions before a new growth can start, or the older one continue. If the stalks or blades of grass have acquired any degree of maturity, an upflow of sap will not continue their growth, even though the usual stature or dimensions have not been reached. There is no stopping work in nature, and renewing the work again under more favorable conditions. Efforts toward maturity are continuous. It would seem that the early growth also stores up within the stalk nutriment for the completion of the labor, for no supplementary growth ever follows after maturity has begun, although the plant may be dwarfed to less than half the usual proportions by lack of rain. A new growth will start somewhere after due time, but it is not as immediate as we are looking for.

I scattered a load of very rich manure on a place next the road in a wheat field last spring, as a test of the value of top-dressing in the spring for wheat. No rains came of sufficient quantity to leach the fertility into the soil, until the heads of wheat had begun to show. The wheat is now somewhat changed in color, but the length of straw has not increased over that beside it, nor can I see that the heads are likely to produce more kernels; but the young timothy, sown with the wheat, is already stimulated to double the growth of that not top-dressed, and the young clover that has sprouted from the seed since the rain came has a growth double that near it where no manure was placed. My conclusions from this, and from notes on former occasions are, as indicated above, that there is a period before maturity when the plant is not dependent upon the soil for its store of food to perfect the grain, but that it is stored up in the stalk, or is certainly independent of any effort of the root to furnish further supplies. If there is sufficient moisture to keep the plant from drying up, the perfecting process will go on to maturity in the stature or volume of growth in which the roots left it weeks before. That before any real change can be effected above ground, following a rain after a severe drouth, the roto system must have time to adapt itself to the new conditions, and start afresh new roots to take up and assimilate the added solvents.

There is a mooted question about working corn in times of drouth, which is doubtless settled in some individual minds, but the practice varies, and different farmers who think they know, practice opposite methods, and give reasons which they think conclusive to sustain their views. I have always argued and practiced that the later cultivations should be frequent but shallow, to prevent disturbing the force of roots at work over the whole surface of the ground, only a few inches beneath the surface. I cultivated my corn five times last year before harvest, and began the sixth after, but the continual dry weather discouraged me before I finished. A neighbor just over the fence, who had not worked his corn very faithfully before harvest, began what he said was to be a thorough job at about the time I did, and continued with a two shovel plow twice in a row to the finish, after I had stopped work, fearing to kill the corn entirely. My cultivation did not affect the corn either way—that not cultivated (I used a five tooth single cultivator) looked as well as the other part of the field, but there was a marked difference in the appearance of my neighbor's field. The corn continued to look fresh and to grow, and I am satisfied that he added one-third to his crop by this heroic treatment. It kept green until frost came, while mine ripened up early, and the stalks were dry when this field was green. My field of corn was on sod, while my neighbor's was after corn, and quite weedy when he began this after cultivation. His corn was not as far advanced as mine at the time referred to, and it may be that the treatment that helped his would have injured mine on this account. I still adhere to this theory, but am free to admit in a kind of private way that I am a little skaky on the point. My friend Gard, of Cass Co., who took issue with me in the FARMER a couple years ago on this subject, will doubtless rejoice at this evidence of reform in practice, for he advocated then the practice of going deeper and deeper as the corn gets larger. There many unsettled questions regarding the office and workings of the root system in plants, and farmers as a rule have paid but little attention to it, as being hidden from sight. Their minds have been too much employed with the more palpable evidence of the appearance of the crop above ground, to think of what may be going on below. There have been some accidental discoveries in this branch of vegetable physiology, but no settled continuous study of the workings of roots in the ground—how they are affected by additional stores of fertility, or from lack of moisture. This is work for the experimental stations of the future. A. C. G.

For the Michigan Farmer.

BURTON FARMERS' CLUB.

In spite of the fact that a circus exhibited in the city, the 9th of this month, we had a goodly number in attendance at our Club. We do not wish to be understood as blaming Forepaugh. He probably had not been informed of our meeting on that day—at least not until it was too late to make any change in his programme. Our meeting was to be held at the residence of Mr. T. Gladden, about thirteen miles from Burton, and arrangements had been made to meet at a place designated at the previous meeting and go in company.

Our President and his wife (probably with a view to making our procession more attractive than the circus), surprised us by hoisting a beautiful banner. We enjoyed our ride and the fine weather exceedingly. Soon after our arrival several visitors were introduced, members of another club that has recently been organized in that vicinity. Pleasant greetings were exchanged, and after a social chat the meeting was called to order. After the necessary routine business was disposed of—dinner included—the Question Box was opened, and its contents distributed among the members. One of the most difficult questions to answer was this: "Why cannot vegetables be preserved by the canning process as easily as fruit?" The lady who was to answer, Mrs. Alexander, said she did not know why, but she knew that if an acid be added to the vegetables, they may be kept just as easily as fruit that contains the natural acid; but of course the vegetable must be sweetened or the acid neutralized before using.

Papers were read by Mrs. Mason and Miss Gilford on the subject of putting up fruit, and a discussion followed. No great difference of opinion was expressed except in the amount of sugar to use, some preferring to can without sugar and sweeten when preparing for the table.

The subject "Large versus small farms" was opened with a paper by F. M. Shepard, followed by one from Mr. Alexander. Both favored small farms, although neither ventured the assertion that the profit in dollars and cents is greater. The principal arguments in favor of them were, the advantage of social intercourse and the superior facilities for schooling. Another idea was that small farms were usually worked more thoroughly than large ones, thus giving better returns to the acre. Then, too, a man who owns a large farm has to depend upon help, and just such help as he can get, to do the work, and we have all heard that "He is best served who serves himself." Mr. Moxly, whose name was next on the programme, thought that although the "small farm" talk sounded very nice, in reality such farms did not pay, for the expenses were nearly as much to run a small farm as a large one—about the same machinery being required. C. R. Woodin thought with regard to help it was better to have a farm large enough so that a man could afford to hire by the year, instead of by the month, and that by keeping the same help right along they would take more interest in the work and could be trusted more.

After the discussion, a name was selected for Mr. Gladden's farm, according to a motion which was made and carried at the previous meeting, that each farm should be named. On account of the number of forest trees which had been left to beautify their home, the place was called "Forest Home."

We then adjourned to meet in four weeks at the home of Mr. M. Bignall. S. J. B.

The Buckeye Combined Grain and Fertilizer Drill, with Center Gear and Glass Fertilizer Distributors.

THE UHL HERD OF SHORTHORNS.

As announced last week the Uhl herd of Shorthorns, one of the oldest in this State, having been started in 1854, will be dispersed by public sale some time early in August. Mr. Uhl has been a breeder and exhibitor of Shorthorns since 1854, but had some experience with them before that time, having brought into the State several bulls which were used to grade up the native stock of the country. Along with such men as A. S. Brooks, Wm. Curtis, the late Edwin Smith, H. E. Degarmo, Ralph Wadhams, Henry Warner and a number of others, Mr. Uhl's name stands as a pioneer in the business of breeding Shorthorns in this State, and he has never faltered or lost confidence in the superior merits of the red, white and roans, as the best cattle for the general farmer.

In 1854 he began his herd with the old Van Cleve stock, but gradually closed them out and confined his breeding herd to stock from two cows, Florence and Victoria. These cows came originally from the Fullington herd, in Ohio, and one of them, Victoria, was imported by the Madison County, O., Importing Co. in 1853, and is recorded in Vol. 2 p. 583 of the A. H. B.

Later the Victoria family were sold out, and the produce of the cow Florence now forms the herd of some 25 head. This cow was from imp. Stapleton Lass, bred by R. Thornton, Stapleton, England, by Sailor (9592), dam by young Liverpool (8227); g. dam, Cherry by Matchem (4427)—Beauty by Young Barmpton (3089)—by Young Eryholme (1981)—by Thorpe (1515)—by Yorkshireman (708)—by Bolingbroke (86)—by Punch (531). Stapleton Lass passed into the hands of James Watson, Ohio, at the time of importation, he bidding $1,350 for her. Florence was sired by Rocket 9211/2, a bull imported at the same time as Stapleton Lass, and bred by M. Faviel, Lyndale Hall, Pontefract, England. He was white in color, a yearling, and sold at time of importation to David Watson, of Ohio, for $425. His breeding was excellent. Mr. Uhl, shortly after he began breeding, went to Kentucky and selected a bull from the herd of the late R. A. Alexander, recorded as De Grey 6594, by imp. Duke of Airdrie (12730), and out of imp. Christine Cattley by De Grey (11346), tracing to Venus by Bedford, Jr., and Rosabella by White Comet (1582). He proved a most excellent animal. He was succeeded by Col. Welch 11537, a bull of the Young Mary family, sired by the noted Hotspur 4030, out of Empress by Conqueror 12628. Following him came Mongol 8650, Duke 16679, Mazurka Prince 17728, Plumwood Lad K. 27453. At present the bull at the head of the herd is Phyllis Duke 3d 57417, bred by W. & A. McPherson, of Howell, sired by their fine bull Waterloo Duke 34072, bred at Bow Park, and out of a finely bred young Phyllis cow, Bostona's Belle. This bull is a good representative of his sire—red in color, very even and smooth all over, long bodied, low on the leg, clean muzzle, good head and horn, as level on the back as a straight edge, and a loin and quarter exceptionally fine. In front he has a broad, rather than a deep brisket, full bosom, legs well apart, smooth, well covered shoulders, excellent over the chine and thick through the crops—all in all, a very fine bull.

Of the females in the herd the oldest is Maid of Brookside, eight years old, a large roan cow by Mazurka Prince 17728, out of Young Florence by Hotspur 4030, and she out of old Florence—a regular breeder and a milker if signs go for anything. Beauty of Brookside from Florence 5th, also from old Florence, and by De Grey 6594, also a roan, is a fine cow, eight years old. Then follow six cows by Plumwood Lad K 27453, of different ages, but very even in form and appearance, five reds and a roan. In two points they are deserving of special commendation. First, they are all milkers—the most ordinary observer will see that at a glance. Then they have the best crops and ribs we have seen in an equal number of Shorthorns in a long time. There is not a single one of them weak there. Most of the cows have been bred young. Here is a four year old out of Beauty of Brookside and by Plumwood Lad K., which has three calves, and is in calf again; two of them are yet on the farm, and a bull is owned in Jackson County. There are three very handsome yearlings in the herd, and four two year olds, all red in color, and good ones, and two good heifer calves. Mr. Uhl has also seven bull calves, one eight and the other ten months old, the balance this spring's calves. The entire herd is in good shape, every cow a regular breeder, and some of them show cattle at any time. Mr. Uhl's catalogue will be out early in July, and the breeding and history of the animals will be given in full.

BUCKEYE GRAIN DRILL.

This is P. P. Mast & Co.'s (Springfield, O.) thirty-first year's experience in the manufacture of the Buckeye Grain Drill. It was a success from the first and seemed to fully meet the requirements at that time, but mankind are not satisfied to stand still, especially Americans; they are continually wanting something better, and the inquiry each year is, "Well, what improvements have been made in the Buckeye for this year?" Its enterprising manufacturers are kept constantly on the lookout to see how they can anticipate the demand for something new, something that will do the work more perfectly. Absolute perfection will never be obtained in this world, and they have to be content in coming as near it as possible, and will no doubt leave something to do for those who may come after them.

As usual, they have something new in advance of others for this season in the line of grain drill improvements. Nearly all the grain drills on the market have but one drive wheel, that is, the feeding mechanism is driven by the ground wheel from one side only, and the consequence is that when driving over rough or cloddy ground with drill, using the very best grain feed, they distribute the grain unevenly. This is caused by the irregular motion of the drive wheel, the uneven or cloddy ground causing the wheel to stop for an instant while the opposite wheel is going forward, thus giving the machine a swinging motion; most farmers who use drills understand this difficulty.

Now, the manufacturers of the Buckeye have effectually remedied this defect by a new improvement which they will use on all drills made by them this season.

This improvement consists in placing the driving gears about the center of the axle and placing clutches in both ground wheels, thereby making them both drive wheels, so that the seeding mechanism is driven by either or both sides; if either wheel stops for an instant, the other keeps up the motion of the driving gears, thereby securing an even flow of seed.

This improvement cannot fail to be appreciated by all who care to have their grain distributed evenly; also, it is of great advantage while turning at the ends of the field or around corn shocks, as the seed will continue to flow evenly while turning either right or left. This improvement, with their improved force feed, for both grain and grass seed, regulated for any desired quantity without any change of gears, together with the superior workmanship and finish, make it, without doubt, the most desirable drill on the market.

The illustration of the Buckeye which appears on this page is of Grain and Fertilizer Drill combined. The drill, with the distributors made of glass, has won for itself a reputation for excellence that is known far and wide.

The general construction of the Buckeye Drill and the reliable reputation of its manufacturers are so well known that we deem it unnecessary to describe it in detail.

MAKING A FARM.

The Work Done by Mr. D. L. Quirk, of Ypsilanti—A Work of Public Importance.

While at Ypsilanti last week looking over Mr. Uhl's Shorthorns, it was suggested that a visit should be paid to the farm of Mr. D. L. Quirk, of Ypsilanti, distant some seven miles from that place and about two from the village of Belleville, Wayne Co. Mr. Quirk is an active business man, being interested in a Chicago packing house, and his farming operations have been pursued more as an amusement than for the purpose of making money. In fact he belongs to the class of "fancy farmers," who have done as much good and been as much abused and ridiculed as any we know of. The operations conducted on this farm we had heard of for some years, and we were glad of an opportunity to look them over. Besides Mr. Uhl, Mr. Philo Ferrier, of Ypsilanti, drove out also.

On the road we stopped for a moment to shake hands with Mr. Burt Spencer, the drover, who, with the thermometer about 90° in the shade, was cultivating his corn and literally earning his (corn) bread with the sweat of his brow, and seemed to enjoy it. The way in which corn had been growing since the recent rains was enough to make any one feel good, even if it was warm.

The Quirk farm consists of about 1,100 acres of land, upon which are about 300 acres of woodland. It must have been a hard place to start in and make a farm. The land is very level, was at one time covered with swamps, marshes and heavy timber. The drainage alone of such an extent of land must have taxed even the energy and courage of Mr. Quirk, and cost a mint of money. But it has been thoroughly and systematically done, and where were once swamps, quagmires and tangled woods is one of the handsomest farms in the State, well fenced, large and commodious barns and out-buildings, and several good farm houses. There are about 800 acres under cultivation, and each field so thoroughly cleared of stumps that machinery can be used all over them. Where now grows a large field of corn was last year a thick woods. The trees were cut, brush burned, and the green stumps blown out with powder. Every portion of the land in cultivation is under-drained, and the fields of clover, timothy, wheat, corn and potatoes are equal to any to be found in this section. Mr. Charles Patzock is in charge of the farm, and has a number of hands under his direction. There are three separate sets of buildings, and it is said to be the intention to divide the farm into three, and place a farmer over each. In this way it is believed the work can be done more thoroughly, and greater attention given to details. The barns built and in course of construction are large and commodious, and it is evidently intended to keep considerable stock on the farm. In fact we should consider this a necessity, as much of the farm is light, portions sandy loam, others even lighter, and grain growing without stock would never pay. Mr. Quirk must think so too, for he has considerable stock now upon the place in the shape of cattle, horses, sheep and hogs. He has a thoroughbred Shorthorn bull, and a large number of Poland-China hogs. The cattle are all grades. The flock consists of grade Merinos, which are bred to a Shropshire ram. But cattle, horses and hogs must be the main reliance, as the land we should think rather low for sheep. The entire farm is now in shape to put some good stock on, and it would be an excellent place for a herd of Shorthorns, as grass rather than grain will be found best adapted to the soil. Besides, the high price of labor will give the grass farm a decided advantage over the grain farm.

The systematic manner in which the draining has been done makes this light soil peculiarly fitted for some crops, such as corn, potatoes, etc., and the appearance of these crops on the farm shows that they will do well if given an opportunity. The sandy loam of a part of it, well mixed with the decayed vegetation of the thick woods which covered it, will give excellent yields of such crops, but it should be reinforced with plenty of good stable manure after a couple of years if its fertility is to be maintained. Hence feeding operations can be carried on to a large extent with great advantage.

In a number of places the earth has been dug away level with the main drains, and here the water flows through wooden boxes for a short distance, open on the top, and provides excellent watering places for the stock, the banks being graded to a gentle slope so as to be easy of access. The water was found to be cool and clear, and free from any obnoxious flavor.

Good roads stretch around and through the farm, in many cases Mr. Quirk having put tile drains on each side of them, and drawn a large amount of gravel upon them. He has purchased a couple of acres of gravel on a neighboring farm, and proposes to give the roads a good covering of this excellent material.

While Mr. Quirk's work has been largely for his own amusement and benefit, it has been a good thing for this entire section, as the portion he has improved was one of the least desirable in the vicinity. Besides, his operations in draining and road-making have not only benefited adjoining farmers, but raised the money value of every acre in the neighborhood. It is well there are men with the means who are willing to spend their money in making such improvements, and it would be a good thing for the State if a large numberof them follow Mr. Quirk's example in this direction.

REPLY TO MR. DAVIS COSSITT

To the Editor of the Michigan Farmer.

I have delayed extending my congratulations to friend Cossitt, over the happy results attending the publication of his paper, thinking possibly some ultra Humphrey pedigree breeder might protest the position assumed, but so far as I can learn all are satisfied, and esteem his paper a masterly presentation of their case.

Of course the Paular breeders are happy. They see in the new article of faith enunciated, viz., "For we are satisfied that they are substantially of the Humphrey blood," the removal of the chief bone of contention and the surrender of the distinction known as pure Infantado, pure Humphrey and the attendant line and in-and-in-breeding; they are even willing that these sheep be bred separate and distinct, and grouped as a family known as substantially Humphrey, or better still, improved Atwood, thereby recognizing the great work accomplished by Hammond, Sanford, Stowell and others; while those breeders who have no faith that any American Merino can be traced to importation, derive solid comfort from the admission that "Stephen Atwood may have bought and sold, and like some of us experimented with rams from other importations of Merinos," as this necessarily involves some method of identifying these sheep; or, in other words, the evidence is then whether the sheep were from the regular breeding end of the flock, or whether they came from the experimental and speculative department, they also think they see in this a verification of the cock-and-bull-story told by the late M. G. Barber, Rutland, Vt., which runs as follows:

"I attended the New York State fair at Poughkeepsie in company with a neighbor (the same fair attended by Mr. Cossitt, where so many pointers were obtained). At one time we noticed Mr. Atwood was absent from his sheep pens and that his son was in attendance, so we thought we would go and ask him some questions about their sheep, the number they kept, etc. He replied that they had about 40 breeding ewes and nearly 100 lambs, but said 'We did not raise all the lambs. Dad goes about the neighborhood and buys up such as look like ours, they are good enough to sell to the Vermonters'."

Let us have peace.

P. S.—Mr. Editor, you have been more than generous in the past in allowing me space in your valuable columns; still if this matter is to drift into a controversy I shall ask you to publish that part of my paper referred to by Mr. Cossitt, which pertains to the Atwood history, so your readers may all know what cock-and-bull stories I have been telling. JOHN P. RAY.

PARTITION FENCES.

BEAVERDAM, June 5, 1887

To the Editor of the Michigan Farmer.

Being a subscriber of the MICHIGAN FARMER I would like to know if a partition fence between two joining farms must be kept in order for hogs, or can one of them set the fence two feet from the ground. Please answer through the MICHIGAN FARMER. JOHN BARGARDS.

A partition fence must be a lawful fence, and the fence viewers are the judges of whether or not a particular fence meets the requirements of the law. The overseers of highways are fence viewers in their respective townships. The statute thus prescribes what a lawful fence shall be:

"SECTION 1. All fences four and a half feet high, and in good repair, consisting of rails, timber, boards, or stone walls, or any combination thereof, and all brooks, rivers, ponds, creeks, ditches and hedges, or other things which shall be considered equivalent thereto, in the judgment of the fence viewers within whose jurisdiction the same may be, shall be deemed legal and sufficient fences."

As to method of procedure to have a fence passed upon, the statute says:

"SECTION 2. The respective occupants of lands enclosed with fences, shall keep up and maintain partition fences between their own and the next adjoining enclosures, in equal shares, so long as both parties continue to improve the same.

"SECTION 3. In case any party shall neglect to repair or rebuild any partition fence, which of right he ought to maintain, the aggrieved party may complain to two or more fence viewers of the township, who, after due notice to each party, shall proceed to examine the same; and if they shall determine that the fence is insufficient, they shall signify the same in writing to the delinquent occupant of the land, and direct him to repair or rebuild the same within such time as they shall judge reasonable; and if such fence shall not be repaired or rebuilt accordingly, it shall be lawful for the complainant to repair or rebuild the same."

THE WOOL CLIP OF MICHIGAN.

Official Statement of the Number of Sheep in the State and the Average Per Head.

OFFICE OF THE SECRETARY OF STATE.
LANSING, Mich., June 15, 1887.

The following statement showing the number of sheep and pounds of wool sheared in 1886, and the number of sheep now on hand, is made up from the "farm statistics" as returned this spring by the supervisors of 1,046 townships, and carefully prepared estimates for the remaining townships in the State. Of the townships from which supervisors' reports have not yet been received, only 17 are in the southern four tiers of counties and 20 in the central counties.

The number of sheep sheared in the State in 1886 was 2,132,999, and number of pounds of wool 12,386,804, an average per head of five and 81-hundredths pounds.

The number of sheep on hand this spring is 2,004,749. At the same average per head as in 1886 the wool clip of the present year will amount to 11,647,070 pounds.

The number of sheep sheared in the southern counties in 1886 was 1,957,132, pounds of wool 11,395,501, an average per head of five and 83-hundredths pounds; number of sheep sheared in the central counties 158,148, pounds of wool 886,856, an average per head of five and 61-hundredths pounds, and number sheared in the northern counties 17,719, pounds of wool 104,447, an average per head of five and 89-hundredths pounds.

Each report since 1884, compared with the preceding report, shows a decrease in number of sheep in the State. The loss from 1884 to 1885 was 88,812; from 1885 to 1886 it was 232,086, and the number now on hand is 128,250 less than in 1886.

An 80-acre field of clover in full bloom, its beauty unbroken by a single stump or other break, was the sight which causes the editor of the Bad Axe News to indulge in some expressions of rapturous delight.

The Horse.

WHICH IS CORRECT?

In an argument against the Ives Pool bill before Gov. Hill at Albany, May 23, the Rev. T. De Witt Talmage said that all the crack race horses in existence never improved the breed of horses. Horse-racing was a kind of sport with bull-fighting and bull-baiting. He protested against the noble animal harnessed to a gambling measure. While we doubt the moral right of a State government to legalize gambling, the statement of Mr. Talmage that all the crack race-horses in existence never improved the breed of horses is certainly an error. The thoroughbred horse is the product of two centuries of racing, and he is the very embodiment of speed, courage and ability to last, and these qualities, each one of them of the highest importance, have been produced by the race-course. In no other way could they have been produced. The course eliminates all weakness and defects. Only those horses can expect to compete which are of robust constitution, of perfect form, and the greatest embodiment of courage. These qualities have been so thoroughly bred into the race-horse that a single cross upon cold-blooded mares completely changes the character of the offspring, and adds wonderfully to its true value. So strong has thoroughbred blood become that a single cross can frequently be traced for three generations in the offspring, and there is not a single breed of horses known to civilized man upon which the thoroughbred cannot make an improvement. It will give them better bone, more elastic muscles, finer proportions, endow them with greater courage, gameness and endurance than can be secured from any other breed, and these qualities all add to the value of the horse. Let us hear the other side of this question from a man whose long experience and careful study of the subject renders him fully qualified to give an opinion, while the position he occupies removes him from the suspicion of only favoring racing from personal and interested motives. We refer to Count Lehndorff, Superintendent of the Government Stud of Germany. He says:

"The principal requisite in a good race-horse is soundness, again soundness and nothing but soundness; and the object of the thoroughbred is to imbue the limbs, the constitution and the nerves of the half-bred horse with that essential quality, and thereby enhance its capabilities.

"The thoroughbred can, however, fulfill its mission only provided the yearly produce be continually subjected to severe trials in public. The only appropriate test, proved by the experience of two centuries, is the racecourse, although its adversaries oppose it as too one-sided, and propose in its stead others of more or less impracticability. The last struggle for victory, in which culminates the exertion of the race, results from the co-operation of the intellectual, the physical and the mechanical qualities of the horse, the development of which combined power is higher and more reliable than any that can be obtained in the same animal by other means. The combination of those three qualities forms the value of the horse destined for fast work: the mechanical, in respect to the outward shape and construction; the physical, as regards the soundness and normal development of the digestive organs and motive power; the intellectual, or the will and the energy to put the other two into motion and persevere to the utmost. The attained speed is not the aim, but only the gauge, of the performance.

"The grand ideal principle which places this test so incomparably higher than any other based upon the individual opinion of one or more judges is the absolute and blind justice, personified in the inflexible winning-post, which alone decides on the racecourse, and the irrefutable certainty that neither fashion nor fancy, neither favor nor hatred, neither personal prejudice nor time-serving—frequently observable in the awards at horse-shows—has biased the decision of hotly-contested struggles as recorded in the Racing Calendar for the space of one hundred and seventy years. This it is that gives to the English thoroughbred horse a value for breeding purposes unequalled and looked for in vain in any other species of animal creation."

And to-day the track is doing for the American trotting horse just what the course has done for the thoroughbred, and it would be a long step backward in the improvement of this noble animal to put an end to tests of his speed and endurance. Mr. Talmage may be strong in theology, but he is decidedly "off" when he attempts to talk "horse."

Ration for Young Trotters.

In response to the inquiry of the managers of a large breeding stable in the Empire State relative to the proper ration for the young stock on their farm, Prof. E. W. Stewart, in the *Country Gentleman*, says

Colts at two years old have made the principal part of their growth, and as they are to begin, at this point, to receive their initiatory education and training for speed, they should be prepared for this as fast as healthful feeding will permit. First, an erroneous opinion prevails as to the amount of coarse fodder required for health in horses; and this mistaken opinion has arisen from the bad method of feeding hay and grain separately. The coarse fodder is only necessary for the purpose of giving bulk to the concentrated grain food in the stomach—to mix with and separate the particles of this concentrated food so that the gastric juice may be absorbed, saturate and circulate through the mass of food in the stomach, as a sponge is saturated with water. The digesting fluid then operates upon the whole contents of the stomach at once, and this gastric digestion is all finished at the same time, because of this porous condition of the contents of the stomach. Now these colts which are to be trained for speed, must get their nutriment, principally, from the concentrated grain food, and this grain food must be mixed with moistened cut hay enough to render it porous and easily digested. Six pounds of cut hay will be found quite sufficient to mix with the grain feed.

Let the grain ration be compounded as follows: Two hundred pounds of oats, 200 lbs. of flaxseed, well mixed together and ground fine. In making a daily ration for colts from two to three years old, take 12 lbs. of the peas, oats and flaxseed mixture, and 1 lb. of new process linseed meal; mix these 13 lbs. with 6 lbs. of cut and moistened timothy hay. Let this ration be given in three feeds, smallest at noon. Here the nutriment will be in such small bulk that the muscles will have free play in speeding, and the nutriment will contain all the elements required to supply the waste of muscle and bone, and to continue the growth of the colts to maturity. I have given a definite ration, but do not mean to be understood that this is the precise amount to be fed to each colt, for the feeder must have judgment to meet the individual wants of each colt. The proportions of grain and hay are right, and the ration is sufficient in quantity for most colts of trotting blood at two years old. The proportions mean weight and never bulk. The 6 lbs. of cut hay will be nearly one bushel in bulk, before it is moistened, but after moistening and mixing the 13 lbs. of grain food with it, the whole will be less than a bushel in bulk. The flaxseed is necessary to correct the constipating effect of the peas, but the whole ration, as given, will have no constipating tendency. For colts from three to four years old, it may be well to add another pound of linseed meal, and then feed according to the needs of each.

An Illinois Farmer's Plan of Watering Horses.

Referring to the usual advice given, not to water horses after they have eaten, an Illinois farmer gives his method as follows:

It seems cruel to put a horse to work when he is quite thirsty, as he is after he has eaten in summer a meal of dry grain and hay, and deprive him of drink for some hours. The plan which I have adopted and tested for thirty years has always given such satisfactory results that I am constrained to give it here. As soon as the animal is brought from the field it is allowed to drink, unless very warm, but always it is made to drink slowly, or rather with frequent pauses. It is given all the cool water it wants. It is then allowed to stand fifteen minutes in a cool place before it is given its food, for coming from severe exertion its stomach is in no condition to receive food. We feed oats mostly in summer; feed some little corn meal and bran, mixed with the cut hay. And we moisten all the food. We do not make it very moist, not wet by any means. After the animals have eaten they will nearly always refuse water if it is offered to them. The water diffused through the feed dilutes somewhat the gastric juice; but we consider the loss thereby occasioned less than the injury resulting from putting the animal to work when thirsty. Though an animal is given all the water it wants before it is given its meal of dry grain and hay in summer, it will be thirsty after it has eaten. We give our teams ample time to eat and some minutes' rest before they are taken to the field; and feel that by reason of this both they and we feel so fresh that we get more work done. In thirty-five years I have not spent a dime for condition powders or other medicines for my horses; have had no need to call in a veterinarian; and in that time have lost but one horse—a valuable animal that I imported from Pennsylvania in 1835—that became over-heated and was killed in the horse-power of a threshing machine, when I was absent. My horses are noted for their sleekness and good condition; hence I am disposed to think that my methods of treating them are good.

Horse Gossip.

BENNY, the Saginaw pacer, who has a record of 2:18½, is reported as being in good condition this spring and very fast. He is entered in the 2:18 pace at Detroit.

AT the Adrian meeting on Thursday last, Bell Boy, the young stallion brought from Kentucky by S. A. Browne & Co., of Kalamazoo, took first money in the race for three-year-olds, time 2:58½. In the 2:35 class, the young stallion Walter Drake captured first honors in straight heats, time 2:37½, 2:37, 2:35½. Both these horses are promising, and barring accident, will do some fast work before the season is over.

A GOOD RECORD.—J. F. Wademan, of Moline, Allegan County, has a mare that has raised him 16 colts in the past 17 years. They have all, with the exception of the youngest, grown to horsehood and are sound and healthy, though differing from horses offered for sale in that most of them are over six years old. The youngest is two weeks old. Mr. Wademan would like to hear from some one who has a mare that can beat this.—*Niles Democrat.*

SAYS the *Stock-Growers' Journal*, of Miles City, Montana: "Clark Chief Jr., one of the finest stallions of the Gallatin Valley and of Montana, was kicked on Monday, and one of his fore legs broken. Bob Barnett is the owner of the animal which was injured thus. The owner stepped from Chief's box, leaving the gate open, the stallion followed out, and in a minute was at the throat of a young Clark Chief stallion near by. A terrific fight began. Mr. Barnett seized a pitchfork, but before he could separate the enraged beasts the younger horse had kicked his sire on the front leg and broken it. The animal was immediately strung up, and everything is being done to save him. Clark Chief Jr., is 21 years old, and has a record of 2:31½, received at Bozeman in 1882."

MESSRS. GEO. E. BROWN & CO., of Aurora, Ill., write us under date of June 11th: "Considering how closely we were sold out of stallions of the age most called for, we have had a remarkably good trade during the past month, having sold several stallions. Amongst others, a fine two-year-old Cleveland Bay to Messrs. Reynolds & Jackson, Alturas, California. In response to a circular stating that in order to make room for our large importation of horses expected soon, we would make exceptional inducements to parties wanting cattle, we have had a great many inquiries, and have sold a large number. Mr. Geo. E Brown is now in England, selecting the largest and best lot of stallions, both Cleveland Bays and English Shires, we have ever imported: and as we have made it a rule for a number of years to thoroughly acclimate our horses before offering them for sale, parties wanting horses can buy of us at the minimum risk of their failing to breed the first year."

REFERRING to the race in the three minute class, which was won by Billy M. at the recent meeting at Hillsdale, the *Democrat* of that place says:

"In three-minute class there were only three starters here, though there were twelve entries at the Quincy meeting last week. It was a horse race from start to finish. Walter Drake is a fine and stylish six-year-old stallion, sired by Jo Gavin. This is his first season on the turf, and he will be given as low a mark as possible before the season closes. Billy M. is a big brown horse owned by H. N. Moore, of Coldwater. He is by Tom Hunter, dam a thoroughbred mare. German Girl is owned at Montpelier, Ohio. Walter Drake could have distanced both competitors in the first heat, but the driver held him down to a jog on the home-stretch, and saved them getting the flag in their faces."

The Farm

VALUABLE ELEMENTS OF FERTILIZERS.

The primary use of manure or fertilizers, is to supply the elements of plant food that are wanting in soil. These may be: 1. Nitrogen, 2. Phosphorus, 3. Potassium, 4. Calcium. 5. Magnesium.

1. Nitrogen.—The plant is unable to assimilate the free nitrogen of the atmosphere, but must receive its supply from nitrogen in chemical combination with other elements, as: 1. ammonia which is nitrogen chemically combined with the element hydrogen—17 parts of ammonia containing 14 parts nitrogen; 2. nitric acid, a chemical combination of nitrogen with oxygen; and 3. organic nitrogen, which is the nitrogen of animal and vegetable matter. Ammonia and nitric acid are the most active forms of nitrogen. Organic nitrogen varies as to its activity as a fertilizer. In blood and meat it is highly active; in hair and leather it is comparatively slow in its effect on vegetation. In finely ground bones the nitrogen is readily assimilable by the plant, but in unground bones or bones coarsely ground takes a long time for it to become available to the plant.

Sources.—Ammonia salts, nitre, nitrate of soda, and the organic nitrogen of bones, blood, hair, fish, flesh, horn, and of oil cakes in general, and guanos are the chief sources of nitrogen for fertilizers.

Nitrogen in a form that can be assimilated by plants is the most valuable element of plant life. It is also the element usually soonest exhausted in the soil.

2. Phosphorus.—Next in importance to nitrogen as a plant food comes phosphorus. It occurs in most soils in comparatively small proportions. It is so found principally in combination with calcium and oxygen, as phosphates of lime. Phosphate of lime is the principal constituent of bones and a variety of phosphatic minerals, as South Carolina phosphates and Canada apatite, and is also found in guano. These are the principal sources of phosphatic manures. The value of these manures depends not only on the amount of phosphoric acid, but also on whether it is more or less readily assimilable by crops. Thus while bone dust or fine ground bone and guano can be used with good effect as suppliers of phosphoric acid to the plant, coarse ground bones and rock phosphates will have no immediate effect. In order to make these various phosphates more rapid in their action, they are often treated with sulphuric acid (oil of vitriol). This treatment converts the insoluble phosphate of lime into a soluble salt of lime called superphosphate of lime, sulphate of lime or gypsum being formed at the same time.

These superphosphates supply to the plant phosphorus, calcium and sulphur.

When freshly treated with sulphuric acid in sufficient quantity the phosphorus is in a form soluble in water. After a time, however, or when applied to the soil it is changed into what was called reverted phosphoric acid.

When sulphuric acid is not added to phosphatic manures, or when added in insufficient quantities, we find what is called insoluble phosphoric acid. This last form of phosphoric acid is much cheaper in the markets, but is not available to the plant.

In making an analysis of a fertilizer, therefore, we separate the phosphoric acid into three divisions of soluble, reverted and insoluble phosphoric acid, and give to each its value.

The "soluble" and "reverted" forms of phosphoric acid are both readily assimilable by plants, and hence are sometimes included under the common name "available phosphoric acid." The "available phosphoric acid" in an analysis is equal to the sum of the "soluble" and the "reverted" phosphoric acid.

3. Potassium.—Potassium ranks next to phosphorus as a valuable food for plants. Plants consume this element in comparatively large quantities, and some soils are unable to supply the demand; especially is this the case with light sandy soils.

Primarily the plants obtain potash from the decomposition of mineral or rock containing potash. Thus, feldspar contains from 10 to 16 per cent. of potash. It is potash combined with silica and alumina. As such it is insoluble, and not available to the plant. In the decomposition of this rock clay is formed and a soluble potash salt, which then becomes available. This decomposition goes on gradually, and thus in most clay soils available potash salts are being continually liberated for the use of the plant. Stirring the soil accelerates this decomposition and the presence of lime or gypsum increases decomposition. In such soils, therefore, the application of lime has another use besides that of plant food.

Plants vary largely as to the amount of potash they require. For example, an acre of wheat yielding 20 bushels requires about 28 pounds of potash; while an average crop of potatoes requires 100 pounds of potash per acre, and an acre of tobacco yielding 3,800 pounds of leaves and stalks assimilates over 200 pounds of potash. It is evident, therefore that the continual cropping of soils with potatoes or tobacco will in time exhaust the potash supply. Light and sandy soils require this element from almost the start.

Sources.—Wood ashes contain potash, and are therefore used sometimes to supply this element to the soil. Sulphate of potash and the muriate of potash are also used in fertilizers to supply potassium.

Calcium.—This element combined with oxygen is called lime, and in this state is most familar to us. It is supposed to be an important element of plant food. Experience has shown that when the soil is deficient in lime, other fertilizers have little effect. Besides supplying the soil with an element of plant food, lime acts in another beneficial way; it prevents loss of other elements, as ammonia and potash, by drainage.

Lime is generally applied to soils in the form of gypsum, or plaster, quicklime and chalk.

Magnesium.—This element is of but slight importance to fertilizers.

In the case of superphosphate and the various fertilizers made from bones, lime and magnesia are always found in abundance. So in fertilizing with these substances, we need concern ourselves with only nitrogen, phosphorus and potassium.

COMMERCIAL VALUE OF FERTILIZERS.

The commercial value of all kinds of fertilizers, with the exception, perhaps, of lime in its various forms, barnyard manure, and other cheap grades, should depend upon the amount and commercial value of nitrogen, phosphorus and potassium they contain and their availability as food for crops.

Taking as a basis the retail price of fertilizer ingredients in Louisville, March 1, 1887, the Director has estimated soluble and reverted phosphoric acid in fertilizers at 10 cents per lb.; insoluble phosphoric acid at four cents; nitrogen at 18 cents; and potash at five cents per pound.—*Kentucky Agricultural Experiment Station.*

How to Feed Buttermilk to Hogs.

Buttermilk is a highly nitrogenous food, containing about one part of nitrogen to two of carbon. The proportion of nitrogen is at least twice as great as it need be and as it should be to be profitable—that is, to feed without material waste. Cornmeal, on the other hand, is highly carbonaceous, as it should be, just as the buttermilk is twice too nitrogenous. Now a due mixture of both these two foods will probably balance the ration and secure the greatest economy, both in preventing waste and in providing the greatest amount of nutrition. In feeding pigs, to begin with, Prof. Henry, of the Wisconsin Agricultural Experimental Station, recommends one pound of meal to each gallon of buttermilk. This leaves the ration still strong in the nitrogenous element necessary to promote growth. As the pigs advance in size, and fat rather than growth and muscle is desired, more corn meal may be added. This will make the food more carbonaceous and cause the hogs to lay on more fat. In some experiments made at the Massachusetts Agricultural Experiment Station, counting corn meal worth $28 a ton and buttermilk at 16 cents per 100 pounds, it was found that a pound of pork cost 4.6 cents. At first, 12 ounces of corn meal were added to each gallon of buttermilk, on another occasion, and the quantity of meal gradually increased, closing with 5¾ pounds of corn meal and three gallons of buttermilk to each hog. Reckoning on the same basis, the cost of a pound of pork was 5.73 cents. This was in the winter, the difference in the season accounting for most of the difference in cost. In first case it took 2.4 pounds of dry matter to make a pound of pork; in the second, 3.67 pounds of dry matter to a pound of pork.—*U. S. Dairyman.*

Corn and Potato Crates.

For economy of labor in the heavy work of harvesting and gathering corn ears and potatoes one bushel crates are very useful. Cut ¾-inch boards 12 inches wide and 12 feet long into ten pieces 14 inches long, 1½ inches wide; ¾-inch battens are cut into strips 17⅜ inches long; these are nailed to the endboards with 8d nails at sides and bottom so as to form a crate; spaces of 1¼ inches are left between the strips; two 1¼-inch holes are bored in each end, about five inches apart, and the wood between those is cut away to make holes for lifting by. I nail a short strip over the hole and bevel the under edge to make a good hold. A strip is nailed across each end of the top of the box so that when the filled boxes rest upon each other there is an air space between them. The boxes are 16⅜ inches long, 14 wide and 12 deep, inside measure (quite a convenient size) and hold 2,751 cubic inches, and as 2,750 cubic inches make a heaped bushel, these are bushel measures. Two of them will fit lengthwise across a 36-inch wagon box, 24 boxes will fit into a 14-foot box, and two tiers may be loaded by using a top side-board; 48 bushels will make a load. Each box has nearly 5½ feet of lumber; 100 boxes require 20 boards, or 240 feet, and 200 battens or 300 feet costing from $4 to $10, and thus the cost of each box is from 5 to 12 cents.

The stuff may be cut out by one man and the crates put together by another in one day. I put up 100 in less than ten hours, and cut out the stuff in eight hours the day before. The potatoes are picked (sorted at the same time) into the boxes, loaded and carried into the roothouse or cellar; a row of them, full, is set up four or five feet from the side of the cellar and another the same distance apart, and thus one may make bins for the bulk of the crop, the spaces in the boxes forming ventilators for the circulation of air. In marketing the tubers the boxes serve the same useful purpose, saving much handling and avoiding injury by the common use of a shovel for this work. In harvesting corn the ears are husked into the boxes and loaded and emptied into the crib. It is easy to know precisely the yield of the crops by the use of these boxes, and how much is put away into the roothouse or corncrib. When corn is cut up in shocks of 7x7, or 49 hills each, and each shock yields a bushel box of ears, the crop is fifty bushels per acre. If two shocks give three boxes the yield is 75 bushels, as 49 is very nearly a hundredth of 4,840, the number of hills at 3x3 feet to an acre, and a heaped bushel of ears is about equal to about a half bushel of corn.—*N. Y. Tribune.*

Agricultural Items.

CORN planted now on good land, well cared for and with a little fertilizer as extra stimulent, can be cut up and put in shock by the end of September and make most excellent fodder. The eight-rowed corn is best for this purpose.

A SENSIBLE writer on agricultural topics says, apropos of butter tests: "A spurt for seven days, when the cow is at her flush, is at best but a flimsy test as to what the cow can really do in the whole year, and a test for a whole year, unless made while the cow is kept as other cows are, upon ordinary rations, is also a misleading test, for if the cow consumes as much in value as her butter product will bring in market, there is no profit in this product."

ALTHOUGH Michigan farmers do not have the trouble with crows that those in Eastern States are compelled to endure, these black nuisances are becoming considerable of an annoyance in certain parts. A Saratoga, N. Y., farmer reports that he keeps them from pulling the corn by scattering a few quarts over the field for them to pick up, and repeating it if necessary. The crows eat enough grubs and cut-worms to pay for the corn.

WESTCHESTER County, N. Y., supplies a large portion of the milk for New York City. The cattle have been found to be badly affected with pleuro-pneumonia, and wholesale slaughter of the herds in which diseased animals are found, has followed. There are 30,000 cattle in the county, valued at $1,200,000, and it is thought most of the cattle will be slaughtered. A number of farms are under quarantine. The work is done under the supervision of government officials; if the meat is found to be healthy, it is sold, if not, it is buried. For a diseased animal the government allows the owner $20; if a healthy one is slaughtered, he gets $40, or more if the animal is specially valuable. There is not much panic among the farmers, who seem to realize that "half a loaf is better than no bread."

ACCORDING to the Ohio *Farmer*, the notorious J. M. Bain has concocted another scheme for the undoing of farmers. The *Farmer* says: "This is how it is done: A package arrives by express for, say John Jones. There are $1.40 charges on it. Mr Jones is notified, pays the charges, and finds the package to consist of a deed for a town lot in Forest City, Mo., valued at $200. The $1.40 charges, they say, is for notary fees, looking up the abstracts, etc., but the deed is a present, for which the recipient is requested to use his influence to get others to locate at Forest City. Investigation has shown that the deeds are not worth the paper they are written on. They purport to come from W. Harlan, and the notary before whom they are acknowledged is James Bain. We learn that hundreds of these deeds have been sent out to parties in Indiana."

A GERMAN scientist proposes to make it a law that all bogus butter must be mixed during the preparation with phenol-phtalein, which is made out of one of the products of the dry distillation of tar, and one gramme of it will be enough for 100 kilogrammes of bogus butter. The butter can then be offered for sale colored yellow, or uncolored, or in any way desired, and the phenol-phtalein will not be seen at all. But by adding the solution of soda, or ammonia and water (*liquor ammonii caustici*), or even a teaspoonful of water and the ash of a cigar, to a piece of butter the size of a bean, the whole of the butter will become a nice red if it is bogus butter, or if bogus butter is mixed with it. It will be immediately seen that this is a proof which can be made by every policeman in a shop, by every guest in a dining-room, &c.

The Poultry Yard.

Poultry Notes.

The two destroying elements with young turkeys are uncooked food and the morning dew. They should not be given food that is uncooked for the first few weeks. Old bread soaked in sour milk is best. Next comes Indian meal pudding. In these cases the food is swollen all it can be before taken into the crop. The morning dew may be good for the boy's feet when he goes for the cows in the morning, but for young turkeys it is death. The latter should be kept on a dry floor or dry ground until all the dew is off the grass. By feeding them in their enclosure they can be kept quiet until time to let them out.

One of the most valuable articles of food for young turkeys is onions chopped fine. They should have all they want and often. The tops are as good as the bulbs. If the reader likes to see little turkeys have a good time, feed them some chopped onions. Pounded crockery is also excellent. If it were not good for them they would not eat it so readily. After they have grown so that a little uncooked food will not injure them, uncooked corn is recommended, or small grains, like wheat and buckwheat. They will soon be so large as to need no special watching.

The item of early chickens excites greater interest year by year. If fowls can be sold in June for one dollar, which of same weight would sell for twenty-five cents in October, it is certainly a good point to get them ready for the June market. A chicken to be of a pound and a half weight in June must be calling for pudding and milk in February. They must have warm and clean apartments and fresh air. By giving them too close rooms they sicken and die, and if we let them out doors they get too much of the cold, fresh air. Some keep the chicks in the cellars of their houses or barns. These are good places if not too damp, and if they are well protected against rats and weasels. The little chicks should have a sandy place to run on. They should be provided with broken crockery, oyster shells or bone meal to pick, and chopped onions, with now and then some chopped fresh meat with corn meal, pudding and milk, and boiled cracked wheat or oatmeal for regular diet, with now and then a boiled egg chopped fine.

For sitting hens it is necessary that the nests be very clean. The house should be kept free from lice. To whitewash a building will be a great help. If roosts and nests are made movable, the house can easily be whitewashed and the roots and nests also kept clean. After this, put in clean, fine straw or hay in the nests. A little soil is also recommended. The hen should have a nest in which others are not laying, and where she can have a quiet nice time all by herself.

By allowing other hens to lay in her nest they get to fighting over the eggs and break them. When eggs are broken, it will be necessary to wash the remaining ones, remove the straw, and place in a new supply. This must be done as quietly as possible, persuading the hen that nothing has happened and that her nest is better than ever.

Experts do not object to hens having nests outside on the ground. In fact, they rather encourage it. Place eggs in a nicely made nest outside, and place the hen on the nest in the evening and place a coop over it. If the hen is disposed to sit, she will soon take to the nest. Feed her in the coop for a few days, and after she seems to be a fixture, raise the edge of the coop so she can go out and in at will. She will need watching for a few days to see that all is running right. If the nests are on the ground and the hen has full range, she will wet the eggs herself by getting her feathers wet and going back on the nest. If in a dry place, however, the eggs should be thoroughly sprinkled once in two or three days. While hatching, the hen will be very sensitive as to who comes around or handles her chicks, and she should be let alone as far as possible.—*G. M. T. Johnson's "Poultry for Profit."*

Egg Eating.

"For egg eating apply the axe cure" says an agricultural journal in one of its recent issues. Undoubtedly the owner who disposed of his egg eating fowls in that manner would have no further trouble from them, but we question the advisability of such a course. True, a hen that will devour its own production of eggs and others, too, is not to be tolerated, but is there no means by which we may reform the hen from this habit and thus avoid the necessity of killing her? This habit is the result of pure carelessness, and this carelessness is noticeable in three different directions. First, the absence of a necessary supply of meat and bone or oyster shells. In the second place, when eggs are allowed to collect in the nest without being gathered, some of them are liable to become broken accidentally, and hens once getting a knowledge of the luxuries contained in an egg shell will in nine cases out of ten sample them again when given an opportunity. Thirdly, when egg shells are thrown out to them, not being broken up as they should be, they are given another opportunity of ascertaining the goodness of the egg. Understanding the cause of this unthrifty habit, it will be seen that it is not difficult to provide a remedy.

The suspected fowls should be separated from the rest of the flock and fed liberally with animal food in addition to their regular diet, and be allowed to lay in nests from which the light has been partially or wholly excluded. Of course the eggs should be gathered as often as possible. If success is not attained in this manner, an application of the "axe treatment" will be necessary. As a cure for this habit it has been recommended that an egg shell artificially filled with lard and pepper be given them, and getting a taste of this mixture it is supposed that they will be cured of the habit. Certainly the hens would not require a second taste to satisfy them that that egg was "no good," but it seems to me that the next time an opportunity was offered this hen, if she was endowed with the ordinary perseverance of her race, would just "wade in."

Even though one should not succeed in breaking a hen of this habit by following the prescribed methods there is nothing lost, while oftentimes the hen will be reformed and returned to the flock all right when otherwise she would have fallen a victim to the axe method.—*N. E. Farmer.*

Horticultural.

FRUIT PROSPECTS IN MICHIGAN.

From the June crop report of the Secretary of State we take the following regarding the present outlook for fruit in this State. It is furnished largely by well-known fruit growers, and comes from sections where fruit-growing is a leading interest:

From C. H. Hanson, Allegan county.—Apples promise 100 per cent. of an average crop, and peaches 110. The late rains have saved the strawberry crop, which will be 100. Cherries hardly an average, which is the case with currants, as the worm is hard at work. No insect troubling the strawberries here. In some localities two year-old peach trees were badly winter-killed—others all right.

From Thomas Mars, Berrien county.—At this early date it is difficult to give an accurate estimate of the per cent., but from present appearances apples in the s uthern tiers of townships will be 100 per cent. The lake shore region about 80 per cent.; peaches and pears will be 100 per cent., raspberries and blackberries 50 per cent., and strawberries 60 per cent.

From E. O. Ladd, Grand Traverse county.—The prospects for fruit in this town were never better than at the present time. Apple trees blossomed full except in some cases where they bore a very heavy crop of fruit last season. Should estimate at least a full average crop—100 per cent. The same may be said of pear and plum trees. There are very few peach trees here, but those I have seen are in a healthy condition, and promise a good crop. The insect enemies seem to be more numerous than usual.

From J. G. Ramsdell, Grand Traverse county.—Apples, pears, plums, cherries and berries of all kinds promise a full crop (above the average). Peaches on old trees will be a full crop, on young trees not more than one-third of a crop. Grapes and currants an average crop. The weather has been very dry—no rain to wet more than two inches below the surface since the snow went off. Currant worms and curculio are making their appearance in great numbers and the cut worm and borers are getting in their usual amount of work. Too early to report on codling moth.

From George W. Parks, Ingham county.—I would estimate the apple, pear, plum and grape crops at 75 per cent., the cherry and peach crop at 50 per cent., where trees are to be found. The peach trees were winter-killed quite generally two years ago. Have had no spring frosts to injure fruit of any kind. The drouth through May has, in my opinion, caused the young fruit to blast and drop prematurely in apple, pear, cherry and plum. Recent copious showers have come in time to help out the strawberry and raspberry crop, but am inclined to think that, on account of the May drouth, the estimate on strawberries should be 75 per cent., and on raspberries 80 per cent. The strawberry crop will be in the market about the 10th of June—usually not until the 25th.

From E. Le Valley, Ionia county.—The prospect to-day, (June 1), is excellent for a good crop of all fruits, peaches not excepted, where the trees are alive. Fruit trees and plants blossomed very full, and the setting of fruit is ample for a heavy crop. We commenced picking strawberries to-day. Heavy rains within the last few days insured early small fruits, while grapes can flourish with any amount of hot, dry weather likely to be had this year. Think the per cent. will average fully 100 or more.

From H. Dale Adams, Kalamazoo county.—The prospects for a full crop of apples in Kalamazoo county have seldom been better than two weeks ago, but the continued and almost unprecedented drouth has materially lessened the prospects, and at this writing no more than 75 per cent. of an average crop can be counted on. The blossoming of the trees was all that could be desired, and the favorable weather immediately following gave full confidence in an abundant setting—and only the extreme hot days and absence of rain causing the young fruit to drop has interfered with the promise indicated earlier. Peaches came through the winter unusually well, notwithstanding the low temperature at times, and it is safe to say there will be a fair crop of the hardier varieties. The only survivors from former severe seasons are about 20 trees of Hill's Chili in my own orchard; give promise of a fair crop at this time.

From S. B. Mann, Lenawee county.—The apple crop will be very light this year. If I were to venture an estimate it would not be above 25 per cent. of a crop. Peaches are not raised in Lenawee county to an extent that is worthy of any report. The trees winter-kill.

From J. E. Campbell, Mason county.—The June prospects for apples are most excellent. Would place the average per cent. 115; peaches 75; cherries and pears each 100; and plums 85 per cent. Berries of all kinds promise an average yield. Since the 29th of May we had abundance of rain, bringing our average up and materially helping future prospects.

From J. H. Whitney, Muskegon county.—From my observation in canvassing the town and what I have since seen, would report apples, pears, plums and grapes 100 per cent., cherries, raspberries and currants 75 per cent. Of peaches there will not be even one per cent.

From I. Marsilje, Ottawa county.—Apples still promise about 75 per cent. and peaches about 20 per cent. Plums and pears have dropped badly during the month of May, caused, I think, by the cold, dry weather, and at times very hot weather. Cherries promise 40 per cent., pears 60 per cent. and plums 40 per cent.

From A. C. Northouse, Ottawa county.—Apples promise a full crop, peaches ten per cent. on the average through the township, although there are a few orchards along the lake shore that will have 50 per cent. Strawberries are dying out a considerable of late, in some patches caused, I think, by something at work at the roots. Strawberries will not average over 50 per cent. Other fruits, except the Cuthbert raspberry, will yield an average crop.

From T. T. Lyon, Van Buren county.—Although, with exception of a few days, the season here has been cooler than the average, there has been an entire absence of the cold rains which have generally been supposed, when occurring during the season of bloom, to prevent perfect fertilization. Observation within the past month induces the conclusion that my last month's estimate was too low so far as the apple crop is concerned. Wherever there is bloom the fruit is setting unusually well, and there seems reason to anticipate at least a moderate crop of this fruit.

So far the peach trees have escaped the "leaf curl," owing, doubtless, to the absence of cold rains, and the danger from this cause is probably now nearly or quite past. While there is an extensive loss of young peach trees this spring, and also the failure of some unfavorably located orchards from winter-killing of the fruit buds, the prospect is quite as good as was stated last month for a satisfactory crop of this fruit, and with reasonably favorable weather from this time forward, from two-thirds to three-fourths of an average crop may be anticipated. The severe loss of peach trees already spoken of has been almost wholly confined to those not yet in bearing.

From Jacob Ganzhorn, Washtenaw county.—The indications are that there will be a full crop of apples. Peaches have set well and will be a full crop. All other fruits promise full crops except cherries. They fruited so full last year that they were unable to perfect fruit buds this season, hence a very light crop.

HORTICULTURE IN LENAWEE.

The last meeting of the Lenawee County Horticultural Society was held at the residence of J. W. Helme, of Adrian, who is credited with having a very beautiful home and a remarkably fine fruit farm. At the meeting, after the usual preliminaries, Mr. William Wickman read a paper on "The Care of Raspberries." He would cut out the old wood, and give the spring trimming March 1, or as soon thereafter as possible. Cultivate thoroughly as soon as the ground is in proper condition. The last of May the young shoots will be about two feet high, when the center buds should be pinched out; then the plants would grow stocky enough to stand alone without staking. As the young canes do not all reach the proper height for topping at once, the patch will require going over about three times. He does not cut back the laterals, or remove the old bearing canes until spring. After the first picking is over cultivate thoroughly, but not late in the season. He should leave three to five canes in a hill, and set plants only one and a half or two feet apart in the rows.

Mr. Laing found difficulty in keeping them low enough. Had to stake them. He asked how it would do to mulch between the rows, instead of cultivating.

Mr. Helme used coal ashes for mulch.

Mr. Strong mulched every other year, putting the mulch on a foot deep between the rows, and, after one season, plowed under, and cultivated again.

Mr. Coller expressed a fear that heavy mulching would affect the flavor of the fruit.

Mr. Strong could not tell as to that, but thought the berries looked better and stood the drouth better.

Messrs. Edmiston and Helme advocated planting, so as to cultivate both ways for field culture especially the red varieties.

Some one complained of rust on his raspberries, and was advised to dig out and destroy.

Mr. Wickman did not advise topping the new canes of red raspberries in the summer, but to let them grow till spring, and then cut back to the proper height.

Messrs. Coller, Howell and Edmiston, would top red raspberries the same as the blackcaps, otherwise the fruit buds would be largely cut off at the time of spring trimming.

Mr. Perkins said when doctors disagree, whom shall we believe? and was advised to fall back on his own judgment, under such circumstances.

Mr. Bradish said there was one point on which the doctors all agree—that was in cutting back early, and not cutting off too much foliage.

Mr. Coller said: Trim now, or rather pull off surplus roots now, to prevent needless cutting hereafter.

Mr. Laing had observed that his grapevines were making a very strong growth, and asked if it was best to pinch back.

Mr. J. W. Helme, jr., was called for, and said where a cane was making a too rapid growth, he would check by pinching out the bud, thus preventing one part of the vine from robbing another. The Niagara grape company recommended the "nipper system" of pruning, which was that of letting both buds from each eye grow, one of which would bear fruit, and should be pinched back two or three leaves above the last bunch of grapes. The other cane will not set fruit, and is allowed to grow strong for next year's fruiting, the one bearing fruit this year being cut out entirely.

Mr. Bradish said, relative to the winter protection of grape vines, we should know their pedigree, our native varieties generally being hardy, while hybrids, those containing one half foreign blood, were generally tender, and should have winter protection. Agawam, Lindley, and others of the Rogers hybrids, are of this class, while Brighton contains only one-fifth foreign blood, and is less tender, yet not entirely hardy.

Mr. Helme exhibited a bottle containing several curculio, with leaves and fruit of the plum, which showed, or seemed to, at least, that the curculio had been feeding on the leaves and fruit.

Mr. Coller said he had tried a similar experiment, but after three or four days' imprisonment, could see no indications that they had been feeding on the fruit or foliage. Part of the members of the society hold to the Riley theory, that the curculio feeds during its full development, while it is laying eggs, the larvæ from which destroy the fruit. Many believe, with Prof. Cook and others, that they do not feed after leaving the larva state. This is a somewhat important question, as upon this fact depends the best method for their destruction.

We are indebted to the *Adrian Times* for the above extract from the proceedings.

POTATO bugs are no longer satisfied with the food which, when liberally sprinkled with Paris green, has heretofore been blessed to them; they are now leaving the potato vines as being too coarse for their dainty appetites, and feeding upon the tomato plant.

FLORICULTURAL.

THE genus anagallis is remarkable for the attractiveness of its flowers, and should be utilized more extensively for small beds, edgings, baskets, etc. The plants seldom exceed two feet in height, and when set in beds, thickly, they cover the ground with a constant profusion of beautiful flowers. Species of anagallis are found wild in all parts of the globe, and florists have obtained from seed many handsome varieties. Our wild pimpernel, called Poor Man's Weather Glass, is one of the brightest of our little wild flowers; and many dwarf plants, from four to six inches high, may, for certain purposes, be utilized to great advantage.

RARE roses are increased by layers, buds and cuttings; layers are made of the strong growths as soon as the wood gets a little hard; slit is cut in the upper part of the shoot to be layered, and it is bent down into rich soil. Everything roots sooner in rich than in poor soil. The cut used to be made on the under side, but they are then liable to break when bending down. Budding is done by taking out a piece of bark with an eye, and inserting it under the bark of another kind, and then tying it in. It is nice amusement for ladies, and any florist will explain the process to those who do not know. Budded roses are not very popular, owing to the tendency of the kinds used to throw up suckers, which, unless the intelligence of the grower is equal to keeping them off, in the end kills the kinds budded on them. Rose cuttings are generally easily raised by those who know little about it. In proportion as one becomes a skillful florist, the failures to strike rose cuttings increase. Almost every one who puts in a few "slips" of half ripe wood into a pot of earth, and sets the pot under a shady fence, succeeds; but as soon as he or she knows "all about it," they can't strike roses. Here, at least, is encouragement to the beginner.

AN excellent manure for the flower garden of a stimulating character may, says Professor Church, be prepared by thoroughly mixing 56 lbs. of sulphate of ammonia with each ton of horse or cow dung. As nitrogenous manures generally tend to develop leaves rather than flowers or fruit, the sulphate or mixture containing it must be applied with caution and at suitable seasons (when the flower-buds are forming, or the fruit setting.) For roses, chrysanthemums, and many robust flowering plants (not heaths, azaleas, rhododendrons or orchids), whether in the open ground or pots, a solution of sulphate of ammonia containing two ounces in three gallons of water, may be safely used twice a week during the season of active growth. Or, as a more general and complete plant food, two ounces of the sulphate, with one ounce of superphosphate and one ounce of kainite, may be thoroughly mixed and repeatedly stirred in five gallons of water; the solution thus formed is to be used as above directed.

Fertilizers for the Grape.

Josiah Hoopes, in the *N. Y. Tribune*, says:

"Good stable manure thoroughly rotted is the best invigorator for grapes: whether organic fertilizers are best for health and longevity of the vine is another question. Application of bones to the grape-border is of greatest importance, as careful examination of the roots will prove. Ground or unbroken bone is preferable to the material in an unbroken condition, as it allows of a more even distribution and hastens disintegration. Grape-roots, however, will push a long distance in a straight line, to obtain this much-coveted food. Some years since, in removing a vine, it was found that the roots on one side were much stronger than the others, and curiosity as to the cause instigated a careful search for the extremities or feeding-rootlets. After several feet had been uncovered the bones of a dead animal were unearthed, but they were so completely covered with a perfect network of small fibres as to be almost indistinguishable.

"These rootlets had penetrated into every crack or inequality of the bones, which evidently had been of great service as food for the plant. Beyond question iron in the soil is of great benefit for coloring the fruit. Iron filings and turnings answer an excellent purpose, and the effect may be noticeable the first season after application. Above all else the sweepings of a blacksmith shop have given excellent results, as we then secure manure in concentrated form and of a variety of constituents—the horse-droppings, hoof-parings, iron-filings, etc., combine to form a powerful fertilizer. Perhaps no other plant is more quickly benefited by the contents of the wash-tubs every week. It is a mild solution of potash and appears to be greedily absorbed at once. A plentiful allowance of wood-ashes forked in the soil in the spring pays well in the crop of fruit. It may not destroy mildew on the foliage, as some claim, but it will certainly invigorate the plant."

Few men are able to speak with greater authority than J. B. Moore, of Concord, Mass., on grape culture, and this is what he told the New England Farmers' Club about manures:

"Any land that is rich enough to bear forty bushels of corn to the acre is rich enough to grow grapes. As far as my course is concerned, I have not used manure after planting.

"I have used applications sometimes of bone and potash salts, with occasional plaster of Paris mixed with it, because the grape requires more or less sulphur in the soil; the plaster of Paris is the cheapest way you can get it. It is sulphate of lime, and does not cost much. You can buy a ton for five or six dollars, and it is as good an application for that purpose as anything that I know of.

"The reason why you don't want to apply animal manure largely to your grapes is, that it induces a rank, coarse growth of wood and foliage, which is unfavorable to the production of fruit. You want a fair, moderate growth of wood and that is all. You want a medium sized wood. The cane should be about the size of your little finger, and it will bear larger bunches and more of them than if it is three times as large.

"You want to have the canes well ripened also. Stimulating the vine by animal manure makes it grow until late in the fall, and the wood will not ripen as well. The fruit buds do not thoroughly develop until the wood is partially ripe. I think you can make a much stronger fruit bud by moderate than by over manuring."

Grape Thinning.

Hundreds of gardeners will now be busy thinning their grapes. Some gardeners in medium-sized places do all the thinning themselves, and a wise plan it is; but in large places the young men have to do it, the head gardener having quite sufficient on his hands without that. In many cases these young men take a pride in their work, and will thin a bunch into a very nice shape and look very well. Now in thinning bunch or bunches, how many of the young men have gone round the bunch instead of making the bunches go round them? Not many I am afraid. It is a very bad practice, and I believe as much the cause of shanking as vine roots getting in unsuitable soil. In pulling a bunch round the thinner the shoulders and stems are bound to a certain extent to get twisted, and thus cause shanking, though it may not appear for some time afterwards. I well remember an old Scotch gardener that I served under, watch me thin my first bunch; to save myself some trouble I drew the bunch partly round to get at the other side. On observing what I had done he said, "You young d——, if I see you at that again I will sack you at once." It was a lesson that I never forgot. It may appear a small matter to simply turn a bunch round for convenience, but it is apparently small matters that cause success or failure. Some of the best grape growers that I am acquainted with have attained their present position by carefully attending to little details connected with the welfare of their vines and bunches.—*Horticultural Times.*

The Strawberry Thrips.

W. P. Smith, of Monmouth, writes the *Benton Harbor Palladium* concerning the microscopic pest that has infested the strawberries in Southern Illinois. He says: "I have been examining them under the microscope and they look formidable, though their actual size is about that of the eye of a very fine cambric needle. Its color is a light yellow and the 'varmint' is very active, and its mission seems to be the destruction of the pollen. It can be shaken out of the flower upon white paper or glass, and be seen by the naked eye. The number is past computation. With a view to its destruction, have been experimenting on its vitality with various substances, and find that drenching the blossoms thoroughly with strong soap suds, made with rain water, does the business for them, if the vines are not too far advanced (they had not commenced to bloom when I left them two weeks ago to-day). I would like you to call the attention of those having strawberries in cultivation about the community to the above cure. It could be easily applied upon quite a large scale by the use of spraying force pumps, and of course no fruitgrower would be afraid to spray his berry vines with soap suds."

The Hop Louse.

Prof. Riley, the entomologist of the department of agriculture, has made public the result of an exhaustive personal investigation into the habits of the *phorodon humuli* or hop louse. His discoveries are expected to prove of great value to hop growers, as he has succeeded in learning the habitation of this plant pest during the winter months and tracing it through the varying stages of insect life. Before the professor's investigation it was not known how or where the insect survived the winter. As a result of his inquiries the professor has satisfied himself that the eggs laid by the female at the close of the summer are deposited in plum trees, where the insect hatches in the spring and resides until the third generation. This third brood, unlike its predecessors, is winged, and immediately after development abandons the plum tree and attacks the hop vine. In the autumn a counter migration from the hop vine to the plum tree occurrs, the winter eggs are deposited and the cycle of life goes on in the same fashion.

The professor believes that the *phorodon humili* has been brought to this country from Europe on plum stock and there is reason to believe that the phylloxera, the dreaded grape pest, was carried from this country to Europe on grape vine cuttings. The discoveries render it possible to check the ravages of the hop-louse, either by the use of insecticides in the spring time before the insect has reached the winged state, or by the destruction of the sheltering plum trees.

After the Bugs.

Now is the time to look for the grubs that bore the bark of the tree. The apple tree is particularly liable to be attacked by these destructive pests, which will destroy a tree in a short time. They begin their work not far from the surface of the ground, sometimes one or two inches above. They should be looked after at once. Not another day should be lost. It is comparatively easy to detect their work and hunt them up. Rolls of chewed bark, resembling sawdust, will be found around the tree at the point of their entrance. A slender wire will usually dislodge them, but where this fails, the pocket knife may be used in cutting away the dead bark and following them by this means to their latest point of attack. The writer of this has killed a number of them already this season, and but for this timely interference the trees would have been ruined.

Budding.

The *Country Gentleman* says: "The first and most important essential is a free-growing stock, so that the bark will separate freely from the wood, and receive the inserted bud. If the growth of the stock is slow, and the bark cannot be lifted easily, it would be best for you to omit budding, and graft the trees next spring, to obtain new and vigorous shoots to bud into. Secondly, you want fairly matured buds, a sharp knife with a thin blade to cut them from the shoot, and a ligature just sufficient to make the face of the inserted bud fit closely to the denuded wood. Observing these requisites, any boy or girl who can handle a knife may soon learn to bud, and will find it a pleasing recreation.

A CORRESPONDENT of the *Country Gentleman* says the spraying of vines with a solution of sulphate of copper or fruit trees with Paris green should be done in the evening or on a cloudy day, as the danger of burning the foliage thus is largely diminished.

Horticultural Notes.

AT Dover, Del., the rose bugs are devouring everything in the way of vegetation, with appetites fully as destructive as those of Kansas grasshoppers. The peach crop is reported to have suffered badly. The bugs take everything before them and are even found in the houses.

THE *Gardeners' Monthly* says that in lawns that have been raised from grass seed sown the past year many weeds will appear. The perennial ones should be weeded out by hand, and the holes where roots were removed filled with a bit of earth which the creeping grasses will soon cover.

A CORRESPONDENT of the *Rural World* says he has found bagging a perfect preventive of grape rot, if applied before the spores causing the rot had found a lodgment on the young berries. He thinks it is a safe rule to say all grapes should be bagged by the time the Concord attains a size of, say one-fourth of an inch in diameter, and as much sooner as possible.

TREES transplanted last spring may not be pushing into growth as rapidly as desirable. A pruning-knife is a better friend in such cases than the watering pot. Sometimes the earth has not been packed close enough to the roots to enable them to draw nourishment properly; in such cases a good packing with a heavy paving hammer is better than a watering.

PRESIDENT J. M. SMITH, of Wisconsin, has the largest crop of strawberries on record—446 bushels per acre. Last year it was very dry, and of course bad for strawberries; but he sold from three and one-half acres plants and berries to the amount of $2,515, and then plowed the plants under and raised and sold from the same land cabbages and celery to the value of $700. This is the way the business pays in the hands of the very finest growers in the United States.

N. J. COLMAN recommends as a remedy for the grapevine flea beetle, to take two sheets of cotton cloth, a yard wide and two yards long, with a stick fastened across each end to keep them spread. Saturate these with coal oil, and let the boys go through the vineyard, holding the sheets under the vines and jarring the beetles off on them. The beetles are killed almost instantly by the kerosene. Two boys will go over a large vineyard in this way, in the course of a day.

JUNE is the best month for transplanting celery. Choose if possible the first day after a heavy rain, when the ground is cool and moist, and be careful to set the plants at about the same level as compared with the ground around them as they grew before transplanting. If set too high they will wilt badly; if set so low as to cover the heart with earth they will be smothered. Press the earth firmly around the plants in setting them and they will usually need no watering, but if the weather should turn hot and dry after setting them they will need watering for a few days. Celery plants are usually set out between the rows of early cabbages, potatoes, onions, etc., so as to have the rows six to eight feet apart, with plants one foot apart in the row. Celery needs rich and good land; the Arlington variety will grow on dryer land than other varieties, but they all do better on good, strong land.

Apiarian.

How Comb Cells are Filled.

It has been a wonder to many how bees manage to fill their cells even full and cap them over when the cells are in a horizontal position. It has been asserted that the capping was done as the filling progressed until the last drop was placed in the tube, and the capping quickly completed.

This theory was given at a guess as the most reasonable, but observation has proven it to be incorrect. Dr. Spencer discovered in one of his hives that a cell was built against glass, and an opportunity being given to watch the process of filling and capping, he took advantage of it, and says that the first bee that began the work of filling deposited a thin coating of honey on the base of the cell, making a sort of varnish, as it were, to the base of the cell.

The next bee that came with honey, raised up the lower edge of this film of honey and forced its honey beneath; the next bee did the same, and this film acted as a kind of a diaphragm, keeping the honey in the cell.

When the cell is full enough to be sealed, the bees commence contracting the opening with wax until there is only a small hole left in the center, when they appear to take one little flake of wax and pat it down over the opening.

At any time during the process of filling the cell, the honey could be withdrawn with a hypodermic syringe, and the dipahragm left hanging in the cell.

Bees and Clover Blossoms.

It is generally believed that bees are essential to the clover blossom by way of carrying pollen from one sex of plants to the other, fertilizing the latter. Especially so is it with the bumble-bee and red clover. Experiments have proven this to be the case, and the reason given for the first crop of red clover failing to produce seed, is because bumble-bees are few in the early part of the season. During winter the little colonies die out, save the young queen, and the work of renewing the bees is left to her alone.

Darwin made some experiments on white clover, and he proved very clearly the necessity of the honey bee to fertilize the plants. In one case a number of heads that had been protected by a net produced but few seeds, and in another case, no seeds; while heads outside the nets, in both cases, which bees had been seen to visit, seeded abundantly—bees being the only insect mentioned by Darwin as having been seen on the plants.

But experiment has also shown that, even with plants that are capable of self-fertilization, the crossing of one individual with another by the agency of insects, is of great benefit, causing them to produce more and better seed, larger and sounder fruit, and more vigorous succeeding plants.

Dr. Beal, of the Michigan Agricultural College, has examined red clover closely, and finds that the blossoms of the first crop have as good pistils, stamens and pollen as the second, and cannot see why they are not just as capable of fertilization as those which come later. Clover covered with gauze by him would only partially seed, while that exposed to the bees seeded, fully showing at least that the bees, or other insects, are needed to make the work complete.

He says that the honey bees in Central Michigan increase the crop of clover from one to three hundred per cent, and he is satisfied that in some locations at least bumble-bees should be encouraged for the good they do to red clover. Now the problem is this: How can the entomologists rear and keep over winter large numbers of fertile queens? It seems to him not improbable that the time may come when bumble-bee queens will be reared, bought and sold for their benefit to the crop of clover seed.

Mr. Root, of Medina, Ohio, suggests the idea that the Italian bee will answer as well as the bumble-bee in fertilizing red clover, as he finds many more of the former upon the plants than the latter. It is possible, however, he admits, that the Italian bee may not do the work as effectually.—*Home Journal.*

Something New About Bees.

At a recent meeting of the Royal Microscopical Society, Mr. F. R. Cheshire called attention to some specimens of bees, known as "fertile workers." It was generally well known that in the beehive all the eggs were usually laid by the queen, and in her absence no oviposition occurs until they have taken some of the eggs remaining in the hive, and by a special feeding of the larvæ have been able to produce fresh queens. If, however, it should happen that in a hive which has lost its queen there are not eggs available for this purpose, it was found that some of the workers under some special circumstances, which could not be very clearly explained, became capable of laying eggs, but that such eggs produced drones only. These bees were known as fertile workers, and though there could be no doubt as to their frequent existence, they were very difficult to catch, owing to their being the same in appearance as the ordinary workers. He now exhibited two of these fertile workers having the ovaries drawn out of the bodies, and attached to the stings and abdominal plates, so as to show that they really were workers. There was a remarkable peculiarity to be observed in connection with the ovarian tubes of these insects—every ordinary worker possessed an undeveloped ovary which it was very difficult both to detect and dissect; but when under the influence of some stimulus the worker became fertile, a number of points began to appear in the tubes which afterward became developed, and it would seem that the eggs were developed in alternation, an examination of the tubes showing them to contain developed eggs alternating with others in an undeveloped condition, and of which some very curious instances were seen in the specimens before the meeting.

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SPECIAL NOTICE.

To New Subscribers.

The back numbers of the FARMER containing the continued story now running in the FARMER, can be supplied to those who request it.

New subscribers from this date, who make the request, will have the back numbers sent free of charge. That is, their subscriptions will date from the time they are received, while the back numbers will be sent in addition. The story was begun in the issue of May 30th. Be sure and mention it if you want those numbers.

WHEAT.

The receipts of wheat in this market the past week amounted to 70,156 bu., against 87,555 bu., the previous week and 43,506 bu. for corresponding week in 1886. Shipments for the week were 124,403 bu. against 97,442 bu. the previous week and 105,444 bu. the corresponding week in 1886. The stocks of wheat now held in this city amount to 106,814 bu., against 197,237 bu. last week and 819,087 bu. at the corresponding date in 1886. The visible supply of this grain on June 11 was 42,112,176 bu. against 42,450,871 the previous week, and 32,424,186 bu. at corresponding date in 1886. This shows a decrease from the amount reported the previous week of 338,695 bu. The export clearances for Europe for the week ending June 11 were 2,837,999 bu. against 2,525,342 the previous week, and for the last eight weeks they were 16,269,753 bu. against 10,778,412 for the corresponding eight weeks in 1886.

The break down of the Chicago "corner" in wheat has been the feature of the market the past week. For ten days the market had shown signs of a collapse, and so strong was the feeling at other points that Chicago prices could not be maintained that outside markets did not advance to nearly the points at which the grain was held there; hence, when the drop came the decline was far less at other points than Chicago. The losses to those who were holding up values must have been large, but the property has only changed hands. There is no loss to the country at large, as all the money used still remains in it, and the wheat also. The flurry is about over, and with prices back to what they were six weeks ago business will go on as usual. The break was largely helped by the favorable weather conditions of the past two weeks, which not only made buyers cautious but inclined those farmers who had wheat on hand to put it into market. Of course it is now known that the crop this year will be a smaller one than last, but as considerable stocks will be carried over there is not much chance for any great appreciation in prices if conditions continue favorable for the new crop.

The following table exhibits the daily closing prices of spot wheat from May 20th to June 18th inclusive:

	No. 1 White.	No. 2 Red.	No. 3 Red.
May 20	88⅝	89⅛	85
" 21	89	89⅛	85
" 23	89	89⅛	85
" 24	88⅝	89⅛	..
" 25	88⅛	89⅛	85
" 26	88¾	89¾	85
" 27	88⅛	....	85
" 28	88⅛	89⅛	85
" 30	....	....	....
" 31	88⅝	89	85½
June 1	88⅝	89¼	....
" 2	88⅝	89⅛	86
" 3	88⅝	90	86
" 4	89	90	86
" 6	89¼	90¼	86½
" 7	89⅛	92	87
" 8	88¼	90	86
" 9	88	89	86
" 10	86¾	88¼	85½
" 11	86	86	85
" 13	85	87⅛	84
" 14	83	85	..
" 15	82⅛	83½	..
" 16	83	83	81
" 17	83½	83¾	81
" 18	84	84⅛	81

The following table gives the closing prices each day of the past week on the various deals of No. 1 white:

	June	July	Aug.	Sept.
Monday	..	..	81⅛	..
Tuesday	..	..	81	..
Wednesday				
Thursday	..	..	79¾	..
Friday	..	..	..	..
Saturday	88¾	..	..	..

For No. 2 red the closing prices on the various deals each day of the past week were as follows:

	June	July	Aug	Sept.
Monday	..	82¾	81⅝	..
Tuesday	84	81	80⅛	..
Wednesday	84	80	79¾	80¾
Thursday	82¾	79¾	79⅜	..
Friday	84⅛	80⅛	79¾	80¾
Saturday	84½	80	79⅝	..

The week closed with this market quiet but firmer on spot and near futures. No. 1 white advanced ⅛c; No. 2 red was steady and firm for spot and near futures, late futures weak and a fraction lower. Chicago was also higher on spot, as compared with Friday, but futures were unchanged. That market is gradually working into shape again. New York was irregular, spot being lower, June futures higher, and July and August lower. The sales of wheat in this market the past week, including spot and futures, were 1,449,000 bu., against 903,000 bu. the previous week.

The first crop bulletin of the Manitoba Department of Agriculture shows an increase in the wheat area over that of last year of 47,693 acres. The condition of the crop is good.

Crop reports from Southern Russia are favorable, as are those from Belgium.

Floods in Hungary are reported to have covered 25,000 square miles, or 16,000,000 acres. The damage done to crops must be enormous.

Crop reports from Austria are rather unfavorable.

In France the weather at last mail advices continued cold, with heavy rains on already saturated soil, and complaints regarding the crops were being made from nearly all sections.

In Germany, at last accounts, the weather was cold and unsettled, and vegetation was in a very backward state, though reported to be healthy. Stocks in the interior are getting very low, and wheat is in good demand, especially for South Germany.

Since the decline in wheat there has been a strong demand for export, and heavy purchases have been made by shippers.

Shipments of wheat from India for the week ending June 11, 1887, as per special cable to the New York Produce Exchange, aggregated 2,320,000 bu., of which 1,920,000 bu. were for the United Kingdom and 400,000 bu. to the Continent. The shipments for the previous week, as cabled, amounted to 1,660,000 bush., of which 900,000 went to the United Kingdom and 760,000 bush. to the Continent. The total shipments from April 1, 1887, beginning of the crop year, have been 10,660,000 bu., including 5,380,000 bushels to the United Kingdom, 5,280,000 to the Continent. The wheat on passage from India May 31 was estimated at 3,712,000 bu. One year ago the quantity was 4,440,000 bu. of wheat "in sight" at the dates named, in the United States, Canada, and on passage to Great Britain and the Continent of Europe:

	Bushels.
Visible supply	42 450,871
On passage for United Kingdom	14 728,000
On passage for Continent of Europe	4,968,000
Total bushels June 4, 1887	62,146,871
Total previous week	62,108,520
Total two weeks ago	62,442 837
Total June 5, 1886	57,067,946

The estimated receipts of foreign and home-grown wheat in the English markets during the week ending June 11 were 110,000 bu. less than the estimated consumption; and for the eight weeks ending May 28 the receipts are estimated to have been 4,135,584 bu. less than the consumption.

The Liverpool market on Saturday was dull with light demand. Quotations on American wheat were 7s. 10d.@8s. per cental for No. 1 California; 7s. 0d.@7s. 2d. for No. 2 winter, and 6s. 11d.@7s 1d. for No. 2 spring.

CORN AND OATS.

CORN.

The receipts of corn in this market the past week were 2,000 bu., against 15,854 bu. the previous week, and 15,551 bu. for the corresponding week in 1886. Shipments for the week were 124,403 bu., against 10,453 bu. the previous week, and 105,444 bu. for the corresponding week in 1886. The visible supply of corn in the country on June 11 amounted to 12,516,074 bu. against 12,709,312 bu. the previous week, and 9,386,885 bu. at the same date last year. The visible supply shows a decrease during the week indicated of 193,238 bu. The exports for Europe the past week were 617,869 against 453,888 bu. the previous week, and for the past eight weeks 4,507,475 bu., against 10,509,478 bu. for the corresponding period in 1886. The stocks now held in this city amount to 21,395 bu. against 22,228 bu. last week and 7,386 bu. at the corresponding date in 1886. Corn has experienced another decline, and the week closed with spot No. 2 offering freely at 38¾c, and few buyers. Of course the late rains, followed by a week of good growing weather, is doing wonders for the corn crop; and as it is well known stocks are pretty large and the foreign demand lighter than usual, it was hardly to be expected that this grain would hold up in value under these conditions and the present weakness in wheat. The Chicago market opened firm and higher on Saturday on reports of damage to the crop, but later in the day the advance was nearly all lost. No. 2 spot is quoted there at 36⅝c, June delivery at 36¼c, July at 37⅜c, August at 38⅞c, and September at 39⅞c per bu. By sample No. 2 yellow sold at 37c per bu., No. 2 white at 36¼@36¾c, No. 3 yellow at 36½c, and No. 2 at 36¼@36¾c. The New York market was firm but quiet for spot, and weak and dull on futures. At Liverpool on Saturday corn was dull and values were slightly lower than a week ago. The following are the latest cable quotations: Spot mixed, 3s. 11½d per cental; June delivery, 3s. 11¼d.; July delivery, 3s. 11¾d.; August, 3s. 12⅝d.

OATS.

The visible supply of this grain on June 11 was 3,282,808 bu., against 3,453,327 bu. the previous week, and 2,596,881 bu. June 5, 1886. The exports for Europe the past week were nothing against 127,129, bu. the previous week, and for the previous eight weeks were 229,543 bu. against 1,139,865 bu. for the corresponding weeks in 1886. The visible supply shows a decrease of 296,941 bu. for the week indicated. Stocks held in store here amount to 21,225 bu., against 22,452 bu. the previous week, and 14,256 bu. at the corresponding date in 1886. The receipts at this point for the week were 24,169 bu., against 17,120 bu. the previous week, and 31,578 bu. for the corresponding week last year. The shipments for the week were 2,050 bu., against 8,403 bu. the previous week, and 19,781 bu. for same week in 1886. Oats are dull, with white lower than a week ago. The same conditions affecting corn apply with equal force to oats—fine weather, favorable prospects and large stocks. Exports are light, but as the exports in any one year have never been sufficient to affect values, this really makes little difference. Oats are generally all taken by domestic markets, and have generally been in demand at this season. But two years of large crops, the cheapness of other grains, and the fact that the season has been unusually early this season, enabling farmers to get along with less grain, all tend to influence prices and weaken values. No. 2 white are quoted here at 32½c per bu., and No. 2 mixed at 30c, with a dull market. At Chicago there was quite a flurry in oats on Saturday over reports that the crop was in bad shape in several states, but at the close values had weakened, and the advance made early in the day was lost. Spot, however, are higher than a week ago. Quotations there at the close of the week were as follows: No. 2 spot, 25¾@25⅞c; June delivery, 25⅞c; July, 26⅜c; August, 25⅞c. By sample No. 2 mixed sold at 26@28½c, No. 3 at 25¾c, No. 2 white at 30@31½c, and No. 3 at 29@29½c. The New York market closed on Saturday with oats steady and higher than last week. Quotations there are as follows: No. 2 white, 38¼@38½c; No. 3 do., 37¾c; No. 2 mixed, 34⅛@35c. In futures No. 2 mixed for June, sold at 33⅞@34c, July at 33½c, August at 31¾@31⅞c, and September at 31½c.

DAIRY PRODUCTS.

BUTTER.

While receipts are shortening up some at this point, the offerings are still large enough to keep values weak and depressed, and at a lower range than last week. Good to choice dairy is quoted at 11 to 12c per lb., with a cent or two more sometimes paid for extra quality. Low grade stock is selling at grease price. Creamery is quoted steady at 16 to 18c, but the latter price is hard to realize except for choice. At Chicago the situation has improved during the week, owing to light receipts of choice stock which were insufficient for the wants of the trade, hence the market is very firm. A quantity of butter is coming in, which shows the effect of the warm weather, and has to be sold at 1@2c below the quotations. Fancy set milk creamery, 17@18c per lb.; fine Iowa, Wisconsin, and Illinois do, 16@17c, with an occasional sale of an extra fine make at 17½c; good to choice do, 15@15½c; fair to good do, 14@14½c; choice dairies, 12½@13½c; fair to good do, 11@11½c; and ordinary fair to do, 9@10c; common and packing stock, 9@9½c. The New York market is rather weak, but prices seem to hold up pretty well. The *Daily Bulletin* says in its review of the market:

"State creamery is in moderate supply, and strictly fancy working out at about 20c for pails and 19@19½c for tubs, but the tone is not so strong as a few days ago. Western creamery is plenty and slow, and though 19c is occasionally asked for selections of special makes, it is too extreme to quote, as strictly fancy is freely offered on the open market at 18½c, and not attracting much attention, and we hear of sales at 18c, holders preferring to sell promptly rather than take chances of holding. Next grades under are slow and really fine lines are offering at 17c, while lower grades are greatly neglected. State dairy is in light supply, with scarcely any strictly fancy coming. Imitation creamery, Western dairy and factory are in fair request and held about steady, but 13c is the top for factory tubs, though occasional factory firkins are held at 13½c."

Quotations in that market on Saturday were as follows:

EASTERN STOCK.		
Creamery, State, pails, fancy		@20
Creamery, State, tubs, fancy	19	@19½
Creamery, prime	17	@17½
Creamery, good	15	@16
Creamery, fair	13	@14
State dairy tubs, fancy		
State dairy, tubs, good	17½	@18
State dairy, tubs, fair	15	@16
State dairy tubs, ordinary	13	@14
State Welsh, choice		@
State Welsh, prime	16½	@17½
State Welsh, good	15	@16
WESTERN STOCK—NEW.		
Creamery, fancy	18	@18½
Western imitation creamery, choice	14	@15
Western do, good to prime	13	@13½
Western do, ordinary	11½	@12½
Western dairy, fine		@14
Western dairy, good	12½	@13
Western dairy, ordinary	11	@12
Western factory, choice	13	@
Western factory, fair to good	11½	@12½
Western factory, ordinary	9½	@10½
Grease	7	@ 8

The exports of butter from American ports for the week ending June 11 were 148,463 lbs., against 224,137 lbs. the previous week, and 117,519 lbs. two weeks previous. The exports for the corresponding week in 1886 were 330,442 lbs.

CHEESE.

The markets all have a depressed appearance at the moment, with a drop in values apparent all along the line. The offerings have been large at the east, while the demand is only about an average, and the foreign markets appear to be weak. New York, Boston, Chicago and Montreal are all lower, as is Liverpool. In this market prices are lower on all grades, quotations at the close of the week being as follows: Michigan full creams, 8½@9c; New York, 9@9½: Ohio, 6½@7½c per lb., closing quiet. Chicago, at the close of the week, was lower than at date of last report. Full cream cheddars were easier at 8c per lb. There was a good inquiry for them, but the arrivals are increasing, factory-men making scarcely anything else. Flats (two in a box) are beginning to get scarce and ranged at 7½@8c, while Young Americas sold at 8@8½c. The volume of orders for the last-named brands was fair. The New York market has gone off during the week, and closes weak. The *Bulletin* says:

"The unexpected full volume of receipts reported for the week, accompanied by hot weather during the past two days, with heavy combined export again from here and Montreal, gave shippers confidence to crowd the market somewhat and discouraged receivers from resisting. Possibly 9¼c might have been made for strictly fancy colored goods, as such have been pretty well picked out and were really scarce, but sales of so-called fancy have been made for less, and white was freshly offered at 9c, with no great demand for it at that. On anything not considered worth the latter figure it was simply a general skirmish, with sellers and buyers doing as well as they could, but buyers generally having the best of it, and according to all accounts, some very nice cheese changing hands at 8½c down to 8c that would range much closer to the best on a steady market. Skims and part skims go low, and shippers have obtained from discouraged holders some poorish Ohio flats at 5½c, for which much more money was asked at the commencement of the week."

Quotations in that market Saturday were as follows:

State factory, fancy	9	@ 9¼
State factory, fine		@ 9
State factory fair to good	8½	@ 9¾
State factory ordinary	8	@ 8½
State factory, part skims, good	7¼	@ 7¾
State factory, part skims, fair	6	@ 7
State factory, skims, ordinary	4½	@ 5½
State factory dead skims	1	@ 4
Ohio flats, fine	8½	@ 8¾
Ohio flats, ordinary	6	@ 8

The receipts of cheese in the New York market the past week were 68,228 boxes against 62,782 boxes the previous week and 35,925 boxes the corresponding week in 1886. The exports from all American ports for the week ending June 11 foot up 4,919,642 lbs., against 3,947,181 lbs. the previous week, and 1,944,658 lbs. two weeks ago. The exports for the corresponding week last year were 2,803,119 lbs.

The Liverpool market is quoted steady, with new American cheese at 51s. per cwt., a decline of 3s. per cwt. from the price as quoted a week ago.

WOOL.

The condition of the wool market is still favorable to sellers, and the outlook gives promise for a continuance of the firmness in values which has been a feature of the market for the past three weeks. Of course eastern dealers and manufacturers are working hard to depress values and weaken sellers, but the wool-growers seem to have taken the bit in their teeth this season and made their own prices, and this is what is surprising our eastern friends. The eastern markets had been put through the usual course of preparation for the new clip by reported sales of grades of wool at low prices; stocks were said to be large, the goods market depressed, wool very cheap abroad, etc., etc., but all this work was thrown away upon the obdurate wool-growers, who would neither take any stock in these familiar tales nor sell their clips except on their own terms—and the terms seem to be getting harder as the season advances. A Philadelphia wool circular of last week says on this point:

"There is much excitement in all the wool-growing districts, and the west has made its own prices on wool without much regard to eastern quotations. This has surprised manufacturers, who do not see how they are to obtain a proportionate advance for their goods, but those who need temporary supplies are disposed to accept the situation at present, in the hope of either getting higher figures for their product, or of buying their future supply of wool at lower prices. The operator, on the contrary, expects a further advance in wool, and that it will follow the course of real estate, wheat and other commodities."

At Boston the market has been active the past week, the record of sales there footing up 2,837,500 lbs. of domestic and 1,168,000 lbs. of foreign, as compared with 1,827,000 lbs. of domestic and 283,000 lbs. of foreign the previous week, and 2,333,600 lbs of domestic and 220,000 lbs. of foreign during the corresponding week in 1886. The aggregate receipts in that market the past week were 13,127 bales domestic and 3,686 bales foreign, against 11,328 bales domestic and 1,704 bales foreign the previous week, and 10,611 bales domestic and 1,206 bales foreign for the corresponding week in 1886.

Figures in the Boston market show no change, but at the close prices were very firm, and some grades are held out of market at current rates. Sales of wool in that market the past week were on the basis of 33@35c for XX Ohio, 33c for X Ohio, 37@38c for No. 1 Ohio, 31@32c for X Michigan, 35@37c for No. 1 Michigan, 37c for fine delaine, New York X at 29@30c, New York medium fleece at 33c, unwashed and unmerchantable at 23@30c. Referring to the market the *Commercial Bulletin* says:

"The market has ruled active throughout the week, and on all sorts and conditions of fleece the closing quotations are exceedingly firm. Four million pounds have been reported among the sales this week, of which three million pounds were domestic wool. Although the diminished number of buyers shows that a large percentage of these sales were the confirmation of previous conditional orders, the result of course has not failed to stiffen the market.

"A survey of the list of sales shows that the inquiry for fleece as distinguished from western and southern wools has notably improved, though we fail to find any advance in the price of fine wool, medium wool of all description having the preference at very strong figures.

"The support of the goods market is still lacking. The season of men's wear woolens in heavy weights closes strong only because of shortened production, which of course means lessened consumption of wool during July. The prospect for new light weight goods, especially of rough finished goods made from medium wool, is good unless manufacturers repeat their mistake of last winter, and rush into the market before they are really wanted."

The Philadelphia market has been fairly active, with sales of Ohio fine delaine at 37c, old Ohio X at 33c, Michigan X at 31½c 33c, Michigan medium at 37c, Ohio medium at 40c and ¼ blood combing at 37½c. The *Record* of Friday last says:

"Advices from the west have ruled stronger until within a day or two, when a lull in the speculation in wool, and here and there a slight softening in rates, have been reported as the result partly of the depressing effect of the panic in wheat and the recent crash in the coffee market. In Ohio growers are demanding 33c to 35c for fine, and 35c and 37c for medium wools, and business has been done at these rates, although some eastern dealers have withdrawn their buyers and refused to follow the upward tendency, as they believe that the outlook does not warrant purchases at the rates quoted. One or two local houses whose agents in the west had exceeded instructions and bought wools above the limits given by their principals have resold their purchases in the country at an advance."

The *U. S. Economist* publishes the following dispatch from London:

"All classes of wool have advanced from five to ten per cent, and the auction sales are progressing with spirit at the improvement. English combing wools are dearer. The strong demands for the United States has caused prices to advance."

It also makes the following comments:

"But this news is tame compared to the private advices from the west and the interior of our State. It is not hearsay or gossip that we now write, but true, living, actual realities. Nor is it wool dealers or local buyers who are putting up prices, but manufacturers, and we have the facts in their own handwritings, to convince of the truths we assert. In Western New York manufacturers are paying 35½ cents cash for light washed medium sorts, and 26 cents for unwashed, and all through the fine wool sections of Ohio 33 to 35c is the current price, and at these figures the excitement runs high, because dealers are afraid they "will be left" to use a common phrase.

"It looks now as if the whole clip would pass from farmers' hands in the next few weeks, and it is clearly evident that those who hesitate through fear of an advance in prices will have their anticipations realized."

The report of the decline in wool at the London sales undoubtedly affected buyers; but as wool is "booming" now, and prices generally beyond an importing point, manufacturers will have to accept the situation and make the best of it. We say, therefore, that the market is stronger to-day than since the new clip began to come forward, and wool better property. There is one thing to remember, however, and that is that the time to sell anything is when people want to buy it. This holds good with wool as with other property. Prices in the interior hold up well, as will be seen by the record of sales in another column.

THE BREAK IN WHEAT.

The past week has been an exciting one among the wheat gamblers, and the "corner" which has been in operation in Chicago for about two months, has been smashed to atoms. The result has been that some twenty firms have been carried down, with losses too heavy and widely scattered to be more than guessed at. Of course these losses have not been caused by destruction of property, and will therefore have little effect upon the country at large. It has merely been a transfer of large amounts from one lot of men to another, and between the two lots of speculators outside people will have but little choice. It is true the producer, as a rule, favors the man who holds up values rather than the one who does his best to depress them, and there is always more sympathy with the "bulls" than the "bears" in such a fight as the one just terminated; but each was doing it for the purpose of making money for himself, and without a thought of the interests of those who were so deeply affected by their operations. The fight is over now, and business will be resumed on the old basis of cash values until some enterprising "bull" or "bear" imagines he can see a million or two in another scheme and starts for it.

Meanwhile we hope our readers have availed themselves of the opportunity afforded them of getting rid of old stocks before the new crop comes upon the market. Certainly the FARMER has given them very broad hints that the accepted time had come, and if they are left with full bins they have simply missed an opportunity which may not occur again in months. The Chicago *Tribune* gives the following information regarding the gains and losses of those most largely interested in the "corner."

"Including the failures of the day before, M. Rosenfeld & Co., Hamill & Brine, and E. W. Bailey & Co., there is a total of nineteen, with aggregate liabilities approximating $2,000,000. Some of these failures were caused by inability of the parties to reach their outside customers, while others were caused by the failure of Rosenfield & Co. It is said that in the majority of cases the embarrassed firms will come out all right as soon as their trades can be settled, and that in one or two instances the books will actually show profits. In addition to those whose failure was brought about by either of the causes given, there are some who were in the deal on their own responsibility and simply got caught where they couldn't help themselves.

"The list of those who profited by the break includes William Linn, Norman B. Ream, Leopold Bloom, Charles Schwartz, N. C. Jones, John T. Lester, Fleming & Boyden, George C. Walker & Co., and Field, Lindley & Co. There are a number of others, of course, but they are harder to find under the circumstances than those who have been hurt. Those mentioned, however, are supposed to have been the big winners in the game, the profits ranging from $25,000 up to $250,000 on the settlements actually made, with perhaps just double that amount outstanding."

As one of the members of a Chicago firm pithily expressed it, "there is not likely to be another 'corner' in Chicago for some time." We should say not.

THE action of Governor Luce in vetoing the University appropriation bill is subjecting him to a great deal of unjust criticism. If he honestly believed that the appropriation called for was larger than the needs of the institution demanded, then most certainly he was right in his action. For one we think it is time to call a halt in the increasing appropriations made from session to session for the University. But few of our citizens can avail themselves of its privileges, and why should taxation be increased from year to year for the benefit of those who can? Even were the Governor in the wrong, the meanness of some of the attacks upon him for doing what he considers his duty, would lead us to defend him. We like to see a man who has the moral courage to have convictions and to stand by them. It is a quality largely lacking in our public men to-day, and we feel like sympathizing with any one who exhibits it, and on the side of those whom Abraham Lincoln called "the plain people."

LEWIS WILLEY, of Lyons, Ionia Co., held a public shearing of his flock of Shropshires on the 4th inst., which a large number of farmers attended. After the shearing Mr. Willey was called upon to give a statement of receipts from his flock since its beginning. He said he had made his first purchase in 1879, of twenty head. Since that time he had received from sheep and wool the following amounts: 1880, $70; 1881, $185; 1882, $357; 1883, $642 70; 1884, $926; 1885, $824; 1886, $1,348, total, $4,352 70. Since making his first purchase he has bought only twelve sheep, and his flock now numbers 240. The fleeces sheared on the 4th averaged 6½ pounds. This was all clean, washed wool. Could anything be more convincing of the value of a flock of sheep on the farm? And yet this statement does not tell all. The fertility of the farm must also have been largely increased, so that the money received must have been nearly clear profit. It forcibly argues that for Michigan more cattle, sheep and hogs should be grown and less wheat at 70 cents per bushel.

MR. A. W. BISSELL, of Pewamo, sends the following report of what his flock of Merinos have done: "Commenced to shear my flock May 1st; sheared 70 head; 20 registered and 50 grades, gave an average of 13 lbs. 6 oz. A two-year-old ram sheared 21½ lbs.; heaviest ewe's fleece, 21 lbs. at five years old. From 38 ewes bred, raised 40 lambs; lost three. Captured 30 premiums at three fairs last fall, 16 first, 12 second, and two third. How is that for the first out?"

MR. W. J. G. DEAN, of Hanover, Jackson Co., has been appointed offical tester of the American Jersey Cattle Club, and will hereafter give a large portion of his time to the duties of this position. His headquarters will be at Hanover. Mr. Dean still remains a member of the Board of Directors of the Club. Mr. T. J. Hand, secretary of the Club, has resigned, and his place has been filled by the appointment of Mr. Weeks, formerly transfer clerk in the office.

MR. R. R. SMITH, of Howell, Livingston Co., writes: "Having noticed lately many reports of Public Shearings, in the MICHIGAN FARMER, it prompts me to report the weight of two fleeces taken from two registered Shropshire yearling ewes, which weighed 11¾ lbs. and 16¾ lbs, respectively. Considering the fact that both ewes were with lamb we consider it a good record. I have many others nearly as good."

FOR many years the people of Great Britain have been trying to stamp out pleuro-pneumonia, but so far their success has not been remarkable. The London *Live Stock Journal*, in an article on the subject says: "The official returns relating to pleuro-pneumonia continue to show the disease to be much more prevalent in Scotland than in England. North of the Tweed there are ten infected counties, while there are only six on this side of the border where the disease is known, exclusive of the metropolis, which has a separate return. We find that in the present year, during the nineteen weeks ending May 7th, of 252 outbreaks in Great Britain only ninety-seven occurred in England, while there were 155 in Scotland; and of 1,129 cattle attacked, 391 only were reported in England, while during the same period 738 diseased animals were returned for Scotland. This is an unenviable position for our Scotch friends, whilst our own is anything but creditable. Unless stamping out by slaughter of diseased animals and those that have herded with them is adopted more thoroughly and extensively by local authorities than appears to be their wont, the dream of entirely freeing Great Britain and Ireland of pleuro-pneumonia—as we have done with foot-and-mouth disease—is a long way off perfect realization."

COMMENCING Sunday, May 1, and until further notice, the Grand Trunk Railway will run its Sunday train to Mt. Clemens from depot, foot of Brush St., leaving Detroit at 10.00 A. M., and arriving at Mt. Clemens at 10.55 A. M. Returning will leave Mt. Clemens at 4.30 P. M. and arrive at Detroit at 5.25 P. M. Train will stop at Gratiot Avenue and Lake Shore R. R. Junction going and returning. Fare for round trip, only sixty cents.

GOV. ADAMS, of Denver, Col., has revoked the quarantine against cattle from Iowa, Missouri, Nebraska and Kansas.

Scotch Collies.

OAK GROVE, June 16, 1887.

To the Editor of the Michigan Farmer.

I should like to know through your paper, if there are in this State any breeders of thoroughbred Scotch Collie dogs? If so would like the address of the most reliable.

JOHN.

Mr. J. A. Armstrong, of Owosso, is engaged in breeding these dogs on a large scale. He is reliable, and his dogs have turned out well as far as we have heard from them. He breeds from imported stock, of which he has some very fine specimens.

Stock Notes.

MR. CHAS. FISHBECK, of Howell, who was a large purchaser at the recent Kentucky Shorthorn Sales, writes as follows: "In your report of Kentucky sales you give us the credit of purchasing four Kirklevington females. We were not so fortunate as to secure the fine cow Lady Kirklevington B.; the other fellow made the last $10 bid. At the sale of Messrs. Bean & Howell, held the 10th, we bought Roan Duchess of Maplewood 5th for $300, Baroness Hudson 4th for $230, and Fletcher of Maplewood 2d at $400. We have left them all in Kentucky to be bred."

MESSRS. J. V. SEELEY & SON, of North Farmington, Oakland Co., report the following recent sales from their herd of Holstein-Friesians; To J. L. Becker, Novi, Oakland Co., the bull Ykema of Stienstra No. 4712 H. F. H. B., by Ykema, dam Stienstra. To Wm. Kenneda, Farmington, bull Ykema Lad 4711 H. F. H. B., by Ykema, dam Lady Ykema. These bulls brought good figures and come from prize-winning stock.

Wool in the Interior.

At Ovid, local rates are 28 to 30c.

At Reading wool is quoted at 28 to 30c.

The Lowell Journal quotes wool at 30 to 33c.

Ann Arbor wool buyers are paying 28 to 30c.

At Port Huron, wool is quoted at 27½ to 32c.

At Lexington, 30 to 33c are local rates for wool.

At Grand Ledge, wool has reached 37c for fine clips.

Thirty to thirty-five cents buys wool at Charlotte.

At Corunna the wool market is more active at 30 to 32c.

Thirty-five cents is the top of the market at Hillsdale.

Saginaw Herald: Wool, washed, 33c; unwashed, 23c.

Wool is worth 28 to 32c at Plainwell. Coming in freely.

Unwashed wool is quoted at 25c at Niles; washed at 33c.

Portland Observer quotes wool at 30c. A fine clip brought as high as 34c.

The Grand Rapids wool market ranges from 20 to 31c, according to the Eagle.

At Mason wool is quoted at 18 to 21c for unwashed, and 28 to 31c for washed.

At Morenci wool ranges from 30 to 34c; and large quantities are being marketed.

The Holly Advertiser reports the wool market as booming, with prices at 28 to 35c.

The market is lively at Rochester, at from 18 to 20c for unwashed and 26 to 30c for washed.

Owosso Times: The wool market has been quite active this week at prices ranging from 35 to 37½ cents.

Pontiac Bill-Poster: Wool is bringing big prices in the Pontiac market. Many thousand pounds have been purchased at from 30 to 36 cents.

The Coldwater Republican complains the wool market is not as brisk in that city as it ought to be, less wool being brought in. Rates range from 30 to 34c.

The Jonesville Independent says wool buyers at that place are very conservative and are drawing out of market because prices are so high they can see no margin. Thirty cents is the local rate.

Monroe Commercial: The wool market remains about as last week, 32c being the highest yet paid, and buyers think it will go no higher. The larger part of the desirable medium wools is already sold.

The Eaton Rapids Journal claims that buyers in that city pay as much for wool as anybody, and more than at Charlotte, but a diligent search by the architect of this column failed to discover in the Journal figures to prove the statement.

Howell Republican: The local wool market is strong in prices compared with the Boston market, but the receipts are not as large as could be wished for. The ruling price for good washed wool is about 30 cents, though choice clips have realized 33 cents.

The Flint Globe quotes wool at 30@40c in its local market report, but says 37½c was "high water mark" for a clip of coarse wool taken by the woolen mills. A clip of 1,600 lbs. of graded merino wool sold for 30½c straight. Unwashed of poor quality, is quoted at 20c.

Lapeer Democrat: Wool is coming in freely this week, over twenty loads per day having been sold on our streets on an average; 35c for Shropshire being the highest price; 28c to 30c for good to choice washed and fine; 17c to 20c for unwashed, have been the prevailing prices. Some disappointment has been experienced by a few farmers who thought that anything that grew on their sheep's backs or legs as good as any, when they found that they could not get the highest quoted prices. There has been more discrimination in qualities this season than ever before, washed wool having sold at 26, 27, 28, 30 and 35c per lb, all in the same hour.

Adrian Press. The local wool market is in a peculiar and unusual condition. Probably seven-eighths of the wool of the county has been sheared, but not more than one-eighth of it has been marketed, and by this we mean contracted. The price paid for what has been bought has ranged from 28 to 32c, about 30c being paid for the most of it. As usual, our local buyers have threaded the county, themselves, or their agents, scouring the highways and even the by-ways, but they can buy no wool. The market is at a dead-lock. Buyers and sellers are apart, and from present appearances are likely to remain so for some time. The buyers offer about 30c, but the farmers are not ready to sell now, and will not name a figure. Many of them expect to realize a third of a dollar a pound, while some of them put their expectations at 35c, neither of which prices the buyers are ready to pay now, and if they were the chances are that the views of the farmers would indicate a corresponding rise.

NEWS SUMMARY.

Michigan.

Strawberries sold at five cents per quart in a number of interior towns last week.

The latest Saginaw industry is a barrel factory which manufactures 350 barrels per day.

A Bay City firm is shipping a consignment of black and white ash, 300,000 feet, to Africa.

Haying has begun in the central and southern parts of the State, and wheat is turning yellow.

Genesee County annually produces about $100,000 worth of fruit, yet its specialty is not fruit.

Perry Jacobs, of Holly, boasts that he had new potatoes and green peas from his own garden on the 12th.

Ilka Hoffman, 13 years of age, of East Saginaw, dropped dead of heart disease in the school-room one day last week.

The Flushing coal company has leased 500 acres of land in addition to that held before, and propose to enlarge their business.

Roy Reed, of Sturgis, was knocked down and run over by a runaway team last week, and so injured he is not expected to recover.

Flynn Bros., of California, report a yield of 9½ pounds of wool per head from their flock of 40 ewes. Thirty-two cents bought the clip.

Lieut. Durand, U. S. N., takes the chair of mathematics at the Agricultural College made vacant by the departure for Dakota of Prof. McLouth.

At Owosso last week strawberries reached the extremely low figure of four cents per quart at retail. Query, what did the producer get?

Bay County voted to effect a loan for the purpose of building stone roads, believing good roads are to a county what railroads are to a State.

Charlotte Republican: Charles Hickox, of Carmel, has a Cotswold lamb that weighed 13 pounds when born and 55 pounds when two months old.

L. G. Bragg, of Kalamazoo, was elected vice-president of the American association of florists, nurserymen and seedsmen, at Chicago, last week.

The Flint paper mills work up 30 tons of straw and old paper into straw board every week, making an output of about 20 tons of board per week.

A veterinary surgeon at Rome, Lenawee County, recently extracted a tooth six inches long and an inch in diameter from the mouth of a four-year-old colt.

Mrs. Joseph Knæbel, of Saginaw, was so unhappy over domestic difficulties that she took a dose of Rough on Rats and is dead. Three small children and a husband are left behind.

Grave charges of bribery and corruption are made against certain members of the legislature, and documentary evidence it is alleged will be forthcoming to prove the charges.

Louis Farrant, of Ann Arbor, is missing from his home, and as he started with stranger to buy land near Petoskey, and had considerable money with him, it is feared he may have been murdered for his money.

George Horrocks, of Millbrook, Mecosta County, gets ten years at Jackson for a savage assault upon a crippled physician, Dr. Morley, recently. The general opinion is that he only received his just deserts.

Twenty-four persons are now known to have been lost by the burning of the Champlain off Charlevoix. It is feared the definite list of passengers may never be secured, as the clerk is dead and the books burned.

Until some one "sees that and goes one better," W. H. Crandall, of Williamston, claims title to having raised the champion big strawberry. It measured 9½ inches in circumference, and weighed two ounces.

R. G. Peters, of Manistee, has not lost faith in the future of the salt business. He is having two large pans built for the manufacture of salt by the vacuum process. The pans will have a capacity of 2,000 barrels and will cost $40,000.

George Hartel of Charlotte, while dressing a hog for market, cut an ugly gash in his thigh, which had to be sewed up by a physician. A week later blood-poisoning set in, and in eight hours after the unfortunate young man was dead.

The Flint woolen mills are doing a prosperous business, evidently. An agent sold 54,000 yards of cloth during a ten days' trip, and the firm have about 90,000 pounds of wool in stock. A new picker room is being built, which will be fire-proof.

A Hastings mother punished her child by placing the little one's hands under a window sash and fastening them there with the sash. Neighbor women detected the outrage and released the child, whose hands were black from stoppage of the blood.

Bay City, West Bay City and Essexville are to be consolidated in 1891, making a city of something over 50,000 inhabitants, to be called Bay City. Then comes the question, which will take rank as the second City, Bay City, Saginaw, with which East Saginaw is to be consolidated, or Grand Rapids.

A long course of dime novel reading is what induced John Corcoran, of Jackson, 16 years of age, to attempt to shoot his father last week. He laid in wait for his father, to avenge the deadly insult of a scolding, after having first cut off all the tomato plants in the garden. He now muses upon his unhappy fate in the jail.

James Pugsley, late of Marshall, but now receiving calls at Jackson prison, where he will remain for ten years for perjury, undertook to play off the fits which he counterfeited so successfully to stave off trial, on the prison officials. But they yanked him out of his boots and his fits at the same time, and he has settled down to discipline as meek as Moses.

Jonathan Green, living near Lowell, had his wool clip stolen on the 9th. The sheriff found it some days after, concealed in a piece of woods on a neighbor's farm, and arrested two young men named Snook and Randall, sons of well-to-do farmers in the vicinity, for the theft. The young men claim it was "a joke," but it is like to prove a very unpleasant joke on them.

Adrian Press: Wm. Weatherby, of Fairfield, a wealthy farmer 74 years of age, was swindled out of $1,000 by a "little game with three cards," worked on him by two strangers, who had rented a room in the house of a retired clergyman whither they took their dupe. Mr. Weatherby, when he realized he had been duped, got out a warrant for the swindlers, but they had cleared out.

Williamston Enterprise: Lucius Williams, while doing his chores in the twilight, thought he saw an animal in the yard where his poultry house was placed, and, as he had suffered a good many raids, ran to the

house for his shot-gun. When he fired, a scream notified him he had made a mistake; he had shot his little son, who received the charge in his legs below the knees, making painful wounds.

James Phelps, of Orleans township, Ionia County, did not enjoy the music which Mrs. St. Johns' ducks furnished him in the early morning. Their matin hymn was less enjoyable than the chant of the frequent newsboy on a Sunday morning in town. So he beheaded the ducks. Mrs. St. Johns valued the melody they made enough to complain of her neighbor in the justice court at Ionia, and Mr. Phelps paid $18 for his rash act.

The passenger propeller Champlain, from Chicago to Cheboygan, was burned in Lake Michigan off Charlevoix, on the early morning of the 17th. The passengers were all asleep, and of the 30 or 40 persons on board it is known from 15 to 20 were lost. Those saved were in the water nearly two hours, or until the light of the burning vessel aroused the residents on shore, who procured boats, rowed out to the scene and picked up the survivors.

The higher rates for wool seem to awaken the covetousness which leads to theft in the minds of some persons. Quite a number of persons have had their clips stolen. Burt Church, living near Corunna, it is alleged took 200 pounds from a neighbor's barn recently. Church's team and the wool were captured at Lansing. J. F. Hutton found thieves unloading his wool at the Lake Shore depot at Lansing, and recovered it and a team they had stolen, but the thieves escaped.

The State Senate passed the local option bill, and it only awaits the Governor's signature to become a law. The Governor will sign the bill. It provides for prohibition in counties giving a majority for it, practically securing prohibition to three-fourths of the counties. The operation of the regular tax law is suspended in those which vote for prohibition. In case of a violation the strict and severe penalties of the regular liquor law cannot be enforced. There will be merely the penalties for prohibition violation of a fine of from $50 to $500 or imprisonment from ten days to six months.

Owosso Times: A two-year-old daughter of Charles Shultz crawled out on the Michigan Central track and went to sleep just before the train from the south was due; as the train approached the engineer discovered something on the track and immediately blew the whistle, and then to his horror saw the child rise up, sit still on the track and look at the approaching train. The fireman, seeing that the train could not be stopped, quickly made his way to the pilot and as the train reached the child kicked her on the side of the face with sufficient force to throw her off the track. It was certainly an act of great heroism. The little one's face was badly bruised but no bones broken.

General.

Last year 27,440,004 persons crossed the big bridge at Brooklyn. The money receipts were $75,000.

A member of a syndicate formed to smuggle opium into this country was captured at Oakland, Cal., last week.

A copy of the Mazarin bible, the first book printed from movable type, was sold at London last week for $13,250.

It was not until 1,191 men had been examined and rejected that a jury was secured in the famous Jake Sharp case at New York.

Mobile promises to rival New Orleans as a shipping point, if certain plans to improve her docks and harbor are carried into execution.

Eleven convicts were killed by the premature discharge of dynamite at the Inman iron mines, 25 miles from Chatanooga, Tenn., last week.

If the Canadian government interferes with the railroad which the Manitobans want to build to the boundary line, they threaten to rebel.

Seems as if coal was a singular article to smuggle, but a Montreal firm is charged with having brought in 14,000 tons of coal without paying duty.

The training school for Indians at Carlisle, Pa., has sent 73 pupils who had completed the course, back to the west. The pupils are principally Sioux.

Guy Webber, of Cincinnati, last week bought 2,000,000 acres of land in Sonora, Mexico, for eastern capitalists. The purpose is to establish an American colony.

The Hungarian coke workers have returned to work in the Pennsylvania coal regions and the strike is ended. Twelve thousand men submit to the old rates and go back to work.

Ex-President Mark Hopkins, of Williams College, for 36 years president of the college, died at North Adams, Mass., on the 17th, 85 years of age. He was widely known as a writer and instructor.

Irish methods seem to have been engrafted on American soil in Pennsylvania, twenty-five of the employes of a salt company at Natoria having been evicted, the company owning the tenements.

Eight million silver dollars in canvas bags are reported to have been outside the treasury vault during the recent count, there being no room inside for them. The treasure was guarded day and night.

One-third of an average crop of hops will be harvested in the Mohawk Valley this season. So many have gone out of the business that it is thought that the new crop will start at 25 or 30 cents per pound.

At Kokomo, Ind., J. C. Pickett, bank president and church member, was arrested last week for hiring parties to burn the block in which he had a store. The stock, worth $8,000, was insured for $19,000.

Miss Mary B. Hill, student in the Freshman class at Cornell University, at Ithaca, N. Y., fell from the path along the edge of a ravine to the bottom, 60 feet, and received such injuries that she died the next day.

It is charged that American fishing boats off Newfoundland, are so eager to capture the savory mackerel that they fish in Canadian waters, quite regardless of treaties. Just let Canada catch them once, though!

The "Bald-Knobbers," a vigilant organization in southern Missouri, have notified the Missouri legislature that unless the extra session is adjourned by the 25th, the "Bald-Knobbers" will assemble in force and disband it.

New York dealers in options deserted wheat and pork, and took a whirl at the coffee trade recently. They boomed prices, but failed to control the market, and in the break that followed many dollars were dropped on margins.

A new gas well has been struck 15 miles from Toledo, with a capacity of about a million and a half cubic feet per day. There is a movement on foot to organize a company to lay a pipe line to convey the gas to Toledo for manufacturing purposes.

Productive co-operation seems to flourish in the west, there being forty-seven manufacturing companies in the States of Ohio, Michigan, Illinois, Indiana, Kansas and Missouri. The greatest success has been achieved at Minneapolis, where the one co-operative cooper shop started in 1874 has increased to eight flourishing establishments.

A meteoric stone estimated to weigh not less than two tons, fell from the heavens near St. Joseph, Ind., last week, and buried itself to a depth of 18 feet in the earth. The fragments of the stone which were scattered on the surface were sent to the Smithsonian institute, and the stone itself will probably be unearthed and scientifically examined.

The National Opera Company, which started out to fill a long-felt want by giving famous operas in English in very elaborate guise, with a big ballet and Theodore Thomas and his famous band as orchestra, is on its last legs, theatrically speaking, and forced to borrow money to pay railroad fare to Buffalo. Nobody has been paid and all the artists claim to be dead broke.

The murderer of the nameless girl who was found dead near Rahway, N. J., and for whom the police and detectives looked so vainly, has been run down by a persistent detective named conscience and confessed the crime. He was drunk, and committed the crime at the instigation of a stranger. He did not know the girl's name. The slayer's name is Casper Strumbach, and he was arrested at Iuka, Ill.

The Board of Visitors of Andover College at Andover, Mass., have decided that Prof. Egbert C. Smyth and his adherents in the faculty of the college are guilty of heresy, and declare the professor's office vacant. The professor, however, intimates this is not the end of the matter. The standard by which the case was tried was not the validity, honesty or correctness of the professor's views, but the creed laid down by the founders of the seminary.

Grand Forks, Dakota, was visited by a destructive tornado on the 16th, which demolished twenty-five large buildings and several hundred smaller dwellings and storehouses. Four persons were killed outright, and thirteen seriously injured. The university of North Dakota was destroyed, including the laboratory and museum. A railroad train was blown from the track four miles from the town and rolled over twice. None of the passengers were killed, but a large number were seriously injured.

The "corner" on wheat manipulated by Chicago operators "busted" last Wednesday, and a half dozen firms dealing in options went under in consequence. The market fell 18 cents in less than one day. Kershaw & Co. had to give up. Moritz Rosenfeld & Co. paid for 16,000,000 bushels of wheat but when the prospect was that they would have to buy the entire crop they felt it was a pretty big contract and gave it up. The failure is for about $1,000,000. While some lost everything, others counted gains by thousands. Wm. Linn made $250,000 in 24 hours; Gruner made $150,000.

Foreign.

The German Emperor's health continues to grow feeble.

Buluschang, a Roumanian town, was nearly destroyed by fire, 800 houses being burned.

The crown prince of Germany has a cancerous tumor on the larynx, which physicians say must soon cause his death.

A famine is reported in Asia Minor. It is said 8,000 people are destitute. The cause is extreme drouth, which prevented a harvest.

A British officer just returned from Russia says the Czar is a hopeless inebriate. After the assassination of his father he sought courage in indulgence in wine, and has become so addicted to liquor that he is irreclaimable. He has had, the officer alleges, several attacks of delirium tremens.

Russia has protested, through her ambassador, against the Anglo-Turkish treaty, alleging that the provisions contained therein were obtained by a transfer of funds from Sir Henry Drummond Wolff to the private account of the Sultan. Russia will no doubt resent the Sultan's disregard of the Czar's protest, and the Sultan be placed in a very awkward position between the two powers, England and Russia.

DIRECTORY
— OF —
MICHIGAN BREEDERS

CATTLE.—Shorthorns.

A. CHANDLER, breeder of Shorthorn cattle Shropshire sheep and Essex swine. Stock for sale. Correspondence solicited. Jerome.

A. D. DeGARMO, Highland, Oakland Co., breeder of Shorthorn Cattle. Stock farm half a mile north of station. Young stock for sale at reasonable prices. my15-6m*

A. J. COOK, Owosso, breeder of Shorthorn Cattle, Poland China swine and Shropshire sheep. Stock for sale. Write for prices and breeding. o30'85tf

A. J. LEELAND, Rose Corners, Oakland Co, breeder of Shorthorn cattle. Stock of both sexes for sale. Correspondence solicited. P. O. address Fenton, Genesee county. je6-1y

A. P. COOK, Brooklyn, Jackson Co., breeder of Shorthorn Cattle. Good families represented. Bull Major Craggs at head of herd. Choice young bulls for sale. A221y

ARTHUR ANDERSON, Monteith, Allegan Co., breeder of Shorthorn cattle, established 15 years, with Romeo 27750 by 23d Duke of Airdrie and Minnie's Duke by Barrington Duke 3d 37624 at head. Correspondence solicited. d14-6m

BENJ. F. BATCHELER, Oceola Center, Livingston Co., breeder of Shorthorns of Young Mary and Young Phyllis families, with the Renick Rose of Sharon bull "Sharon Duke of Clark" at the head of herd. Young bulls and heifers for sale. Also registered Merino sheep.

C. G. LUCE & SON, Gilead, Branch Co., breeders of Shorthorns. Families in the herd: April Morns, Phyllis, Miss Wiley, Rose of Sharon and Blossoms. Correspondence solicited and promptly answered. d14-6m

CHARLES FISHBECK, Lakeside Stock Farm, Howell, Livingston Co. Breeder of Shorthorns. Herd headed by Bates bull Baronet, Belle Bates 47411, Belle Duchess, Cambria's Victoria, Stapleton Lass, Selinas and Bright Eyes families. Young stock for sale. June3-1y

D. M. UHL, Brookside Herd, Ypsilanti. Choice Shorthorns of the best milking and beef making qualities for sale. Correspondence solicited. jny20-1y

DAVID P. WILCOX, Forest Hill Stock Farm Breeder of thoroughbred Shorthorns. Stock for sale. Correspondence solicited. Improved farm of 300 acres, with good buildings for sale. Postoffice address Riley, Clinton Co. n27-1y*

F. S. BURNETT & SON, breeders of Shorthorn cattle. All stock registered. Residence, four and a half miles east of Bancroft, Shiawassee Co. Stock for sale.

F. A. BRADEN, Victoria Stock Farm, Bancroft, Shiawassee Co., breeder of pure bred Shorthorns of the Victoria and Stapleton Lass families with Lord Raspberry 2d 48633 at head of herd Stock for sale je10-1y

GEORGE W. STUART, Grand Blanc, Genesee Co., breeder of thoroughbred Shorthorn Cattle, Registered Merino Sheep, and Jersey Red Swine. Correspondence solicited. ja17-1y*

HENRY BROOKS, Brooks Farm, Wixon, breeder of Shorthorn cattle. The following families represented: Pomona, Rose of Sharon and Phyllis. Correspondence promptly answered. o19-1y

HENRY LESSITER, Oakdale Stock Farm, breeder of thoroughbred Shorthorns. Stock for sale. Correspondence promptly answered. P. O. address, Grattan, Kent Co., Mich. ja15-1y

H. H. HINDS, Stanton, Montcalm Co., breeder of Shorthorn Cattle and American Merino Sheep. je27-1y*

JOHN C. SHARP, "Hillside Farm," Jackson. Breeder of Shorthorn cattle and Poland China swine. Families: Peri Duchess, Rose of Sharon, Young Mary, Gwynne, Victorias, etc., with the straight Rose of Sharon bull, "Sharon Duke of Bath No. 64449" at head of herd. Young stock for sale. Correspondence solicited.

JAMES D. BOTSFORD, Osceola, Centre, Livingston Co. Breeder of thoroughbred Shorthorns, registered and grade Merino Sheep. Stock for Sale. June3-1y

JAMES MOORE, Milford, Oakland Co., Mich., breeder of Shorthorn Cattle of leading tribes, herd headed by Gloster Wild Eyes 56239. Also Hambletonian and Percheron horses, Highland Scotch sheep and Jersey Red swine.

JOHN McKAY, Romeo, Macomb Co., breeder of Shorthorn cattle. Young bulls and heifers for sale. Correspondence solicited.

J. E. FISK & SON, Johnstown, Barry County, breeders of Shorthorn cattle, Registered American Merino sheep, and Poland-China swine, Plymouth Rock and Wyandotte fowls. Stock for sale. Correspondence invited. P. O. Bedford, Calhoun Co., Mich.

L. N. OLMSTED, Burr Oak Farm, Muir, Ionia Co., breeder of Shorthorns. Stock for sale. Correspondence solicited. ja1-1y*

M. DAVIDSON, Tecumseh, Lenawee County, breeder of Shorthorn Cattle. A few choice young females for sale. Also some young bulls. Correspondence will receive prompt attention.

N. B. HAYES, Eldorado Stock Farm, breeder of Shorthorns of the Young Mary, Phyllis, etc., families. Young animals for sale. Also breeder of Norman Percheron stock with imp. Eldorado at the head of the stud. Correspondence solicited. P. O. address Muir Ionia Co. d11y

O. SNOW & SON, Oaklawn Park Stock Farm, Kalamazoo, breeders of thoroughbred Shorthorns. Families represented are Young Marys, Phyllis, Golden Pippin and White Rose. Correspondence promptly answered.

S. CHAFFEE, Byron, Shiawassee Co., breeder of Shorthorn cattle, Merino Sheep and Poland China swine. All stock recorded. Stock for sale

S. H. ELLINWOOD, Rose Corners, P. O. address Fentonville, Genesee Co., breeder of Shorthorns. Stock of both sexes for sale. Correspondence will receive prompt attention. n26 26

THE COLLEGE FARM, Agricultural College, Mich., breeds Shorthorn cattle, Berkshire and Poland-China swine, Merino and South down sheep. A choice lot of animals always on sale at very reasonable prices. Address Sam'l Johnson, Sup't of the Farm. s28-1y

WM. BALL, Hamburg, Livingston Co., breeder of Shorthorns. Principal families: Rose of Sharon, Young Mary; Young Phyllis and Cruikshank. Also breeder of thoroughbred American Merinos of the best blood as well as the most thoroughly practical.

W. C. WIXOM, Wixom, Oakland Co., breeder of Shorthorn Cattle of the Kirklevington, Hilpa, Flat Creek Marys, Cruikshank, Rose of Sharon, Aylesby Lady, Phyllis, Rosemary, Duchess of Sutherland, Lady Helen, and other families, headed by the pure Bates Barrington bull Barrington Duke 7th No. 72667.

WM. FISHBECK & SON, Woodland Stock Farm, Howell, breeders of Shorthorn cattle of Victoria, Rosemary and Darlington tribes. Correspondence solicited. jan1:87

WM. WHITFIELD & SONS, Lakeside Stock Farm, Waterford, Oakland Co., breeders of thoroughbred recorded Shorthorn cattle and Hampshire sheep. Stock for sale. s1-1y

Holstein-Friesians.

CHAS. F. GILLMAN, 'Penfield Stock Farm" Pewamo. Breeder and dealer in thoroughbred Holstein Friesian Cattle and Merino Sheep. a221y

C. V. SEELEY, North Farmington, Oakland Co., breeder of Holstein-Friesians. Stock for sale of the famous Ykema family. Ykema 332 (D. F. Herd Book) at head of the herd. Correspondence will receive prompt attention. au10tf

E. R. PHILLIPS, Bay City, breeder and importer of Holstein-Friesian Cattle. Correspondence solicited. Intending purchasers invited to call and inspect stock.

J. M. STERLING, Monroe, breeder of pure Holstein-Friesian cattle. Stock for sale. Correspondence and personal inspection solicited.

W. K. SEXTON, Howell, importer and breeder of thoroughbred Holstein-Friesian Cattle. Stock farm, three miles south. o13-1y

W. L. WEBBER, East Saginaw. Herd mostly imported, selected in Holland for Mr. H. E. Boardman by Mr. Cornelius Baldwin, of Ohio. Choice animals for sale.

Devons.

R. G. HART, Lapeer, breeder of Percheron and Standard-bred Trotting horses; Devon, Galloway and Hereford cattle; Merino sheep and Cheshire hogs. All stock registered. Farm adjoining city limits; residence, and breeding and sale stables in the city. Come or write me.

Galloways.

R. B. CARUSS, Essex, Clinton Co., St. Johns P. O. Breeder of Galloway cattle, American Merino sheep and Essex hogs. Correspondence solicited.

Herefords.

EDWIN PHELPS, Maple Place Farm, Pontiac, Oakland Co., breeder of Hereford Cattle of most popular strains. Waxwork 6390 (6250) at head of herd. Stock of both sexes for sale at reasonable prices. f14-1y

RIVERDALE STOCK FARM, Metamora, Lapeer Co., Hereford Cattle, Merino Sheep, and Berkshire Swine. All stock registered. Correspondence solicited. Address M. Wickham, Manager.

THOMAS FOSTER, Elm Grove Stock Farm Flint, Genesee Co., breeder of Hereford cattle (Lord Berwick 2d at head), Cotswold and Shropshire Sheep, Berkshire swine, Road and Trotting horses, with stallions Flint and Mambrino Gift, Jr., in the stud, with eleven mares of Mambrino and Hambletonian breeding. Stock for sale. m27-1y

Jerseys.

SMITH BROS. Eagle, Meadow Brook herd of Jerseys. Stock of the highest quality and of the best strains. Houdan chickens. s30-1y

W. J. G. DEAN, Hanover, high-class Jerseys of the Rioter-Alphea and Grand Duke Alexis strains. Pedro Star 11336, son of Pedro 3187, at the head of the herd. Registered Merino Sheep. s8 1y

SHEEP.—Merinos.

A. A. WOOD, Saline, breeder of thoroughbred Merino sheep. A large stock always on hand. Also Poland-China hogs; herd started from those of B.G. Buel, of Little Prairie Ronde, and G. W. Harrington, of Paw Paw. ja17-tf

C. E. LOCKWOOD, Washington, Macomb County, breeder of Registered Merino Sheep of Atwood Stock, descended directly from the Hammond flock. Stock for sale. Correspondence solicited.

E. BURLINGAME & SON, Byron, Shiawassee Co., breeders of registered Merino sheep of Rich blood; also Shorthorn cattle. Stock for sale. Correspondence invited.

F. M. DEAN, Maple Avenue Stock Farm, Pewamo, Ionia Co., breeder and dealer in Improved American Merinos. All stock registered and descended from Vermont flocks. Also registered Poland China Swine. Stock for sale. Correspondence solicited.

G. L. HOYT, Saline, Washtenaw Co., breeder of Vermont and Michigan registered thoroughbred Merino sheep. Stock for sale.

J. A. GIBONEY, Kalamazoo, breeder of registered Merino sheep. Size, form, length and density of fleece specialities. Young stock for sale at low prices. Correspondence solicited. jn10-3m

JAMES McGREGOR & SON, Metamora, Lapeer Co., breeders of thoroughbred registered Merino Sheep. Stock for sale. my13-y

J. C. THOMPSON, Romeo, Macomb County, breeder of Thoroughbred Registered Merino Sheep; also Poland-China Hogs. Stock for sale. Correspondence solicited. may5-1y

J. EVARTS SMITH, Ypsilanti, breeder of thoroughbred Merino Sheep, registered in Vermont Register. Rams and ewes for sale of my own breeding, together with recent selections from some of the best flocks in Vt. Examine before purchasing elsewhere ja31-8m

J. S. WOOD, Saline, Washtenaw Co., breeder of Vermont and Michigan registered thoroughbred Merino Sheep. Stock for sale.

R. W. MILLS, Maple Ave. Stock Farm, Saline, Washtenaw Co., breeder of Vermont registered thoroughbred sheep. Atwood ram Peerless at head of flock. Also breeder of Poland China swine. Correspondence solicited.

R. HATHAWAY, Addison, Lenawee Co., Mich. Breeder of thoroughbred American Merino sheep, registered in Vermont and Michigan Registers. Rams and Ewes for sale of my own breeding, together with selections from some of the best flocks in Vermont. Correspondence solicited.

S. C. LOMBARD, Addison, Lenawee Co., breeder of Vermont and Michigan registered thoroughbred Merino sheep. Stock for sale. Correspondence invited. s16-1y

Shropshire-Downs.

EMERY A. GARLOCK, Howell, breeder and dealer in imported and Michigan bred Shropshire sheep. Foundation, 26 recorded ewes out of Wesley J. Garlock's flock. Write for particulars. o19-1y

GARLOCK'S imported and Michigan-bred Shropshire sheep are the popular mutton and wool breed. Oldest established in Michigan. Unexcelled by any. Choicest stock at moderate rates. Wesley J. Garlock, Howell, Mich.

J. F. RUNDEL, Birmingham, Oakland Co., importer, breeder and dealer in thoroughbred Shropshire sheep. Stock registered. I import my sheep direct from England. Correspondence promptly answered.

J. LESSITER, Jersey, Oakland Co., breeder of Shropshire Down Sheep, registered and unregistered; also Shorthorn Cattle. Stock for sale at reasonable prices and terms.

ROBERT R. SMITH, Howell, breeder of and dealer in registered Shropshire sheep. Stock always for sale. Terms to suit customers.

T. A. BIXBY, Lake View Stock Farm, South Haven, breeder of Shropshire Stock from imported stock. All registered. Largest flock in Western Michigan. Inspection invited. au3-4m

HOGS.—Berkshires & Suffolks.

A. W. COOLEY, Coldwater, Branch Co., breeder of pure Berkshire hogs of the largest size and very best strains. Pigs and young breeding stock for sale at reasonable prices. All of my breeders are recorded in the American Berkshire Record. Write for prices.

EZRA BROWN, Englishville, Kent County, breeder of Berkshire swine of the best known recorded stock. Stock for sale. s30-2t

Poland-Chinas.

A. O. BOWEN, Wixom, breeder of pure-bred Poland-China swine. All breeders recorded in Ohio P. C. Record. Choice stock for sale

C. W. JONES, Richland, breeder of pure-bred Poland-Chinas. My breeding stock all recorded in both the Ohio and American Poland China Records. aug4-

G. F. HARRINGTON, Paw Paw, breeder of pure-bred Poland-Chinas. All stock in Ohio P. C. Record. Breeding stock not akin for sale. Also breeding registered Merino sheep. Correspondence invited.

G. W. INMAN, Ypsilanti, Washtenaw Co., breeder of Poland-Chinas of the most popular strains. Some superior young pigs for sale cheap. Also Merino sheep. All stock bred from recorded animals. Correspondence solicited.

H. W. RILEY & CO., Greenville, Montcalm Co., breeders and shippers of Poland-China swine; all recorded in Ohio Poland-China record. Correspondence solicited. s28-1y

Chester-Whites.

C. A. SEARING, Lyons, Ionia Co., breeder and shipper of Chester White swine, Oxford Down sheep and Shorthorn cattle. All stock recorded. Correspondence solicited and personal inspection invited. Reduced rates by express.

Small Yorkshires.

W. W. TUBBS, Delhi Mills, Washtenaw Co., breeder of pure Suffolk Swine. Choice stock for sale. Correspondence promptly answered.

W. M. HILBERT, North Lansing, breeder of Small Yorkshire pigs of best known strains of blood. All breeding stock recorded. Stock for sale. my30-1y

HORSES.—Draft and Trotting.

N. J. ELLIS, Springfield, Oakland Co., breeder of high grade Percheron horses. Stallions in use El Paso, Ingomar 1320 and Patachon 5001 (6478). a4-26

POULTRY.

MRS. N. A. CLAPP, Wixom, Mich., breeder of high class Light Brahma chickens. Eggs for sale by the sitting. Correspondence invited. m21-13t

MRS. W. J. LAWRENCE, Battle Creek, breeder of pure-bred poultry. L. and D. Brahmas, Langshans, P. Rocks, Wyandottes, Japanese, Royal Pekin and Golden Seabright bantams. Toulouse and Embden geese. Rouen and Pekin ducks. Bronze Turkeys. Pea fowls, Pearl Guineas, and dealer in cage birds. Also registered Merino sheep and Poland-China swine Stock for sale and eggs in season. n9-1y

GREENWOOD STOCK FARM,
Poland China Swine a Specialty.
Stock recorded in Ohio Poland China Record. Correspondence and inspection invited.
B. G. BUELL,
tf *Little Prairie Ronde, Cass Co., Mich.*

Poetry.

A VERY INTELLIGENT BIRD

We conversed some time together—
You may think it quite absurd—
But I found that quail in the orchard
A most intelligent bird.

He chose a shady corner
Before he would alight;
I inquired: "What is your name, sir?"
He said at once, "Bob White."

He had an air of business,
The knowing little sprite!
So I asked about his family;
He said at once, "All right."

I thought I'd like to see them,
And asked him if I might;
Perhaps it was the thought of toast
That made him say, "Not quite."

"Permit me just a glance, sir,
They must be a cunning sight—
Then tell me what's the reason,"
He winked and said, "Too bright."

I said, "Don't you get dizzy
When you swing at such a height?
He hopped upon a loftier twig,
Then answered back, "You might."

Though from answers dissyllabic
He never swerved a mite;
Yet he always had an answer,
The roguish little wight.

At last I tried to catch him—
He showed no signs of fright,
But simply spread his winglets,
And chippered back, "Good night."

Your parrots and your mocking-birds
You may think are very bright;
For wit and for intelligence
I recommend "Bob White."

—*The Congregationatist.*

LIFE'S LONGINGS.

A child ran laughing on the beach,
The sun shone warm and bright
Upon her waving golden hair,
Her tiny form so slight.
"I wonder why the world's so fair,
So full of sun and song;
I wonder why big folks don't laugh
And play the whole day long.

A maid was walking on the strand,
She gazed far out to sea;
Where o'er the sunlit waters rode
A bark so gallantly.
"My love is coming over the waves,
Is coming soon to me,
I wonder how, in this sweet world,
Old folks such shadows see."

A woman stood upon the shore,
Her eyes, with weeping red,
Looked sadly on the cruel sea
That ne'er gives up its dead.
"I wonder why the world was made
So dark and full of care,
No wonder that life's burden seems
Too great for one to bear."

Near by the window's ledge they saw
A grandame, old and gray—
The window looking out to sea
Where ships at anchor lay.
"I wonder when my eyes shall see
Life's ship at anchor lie,
Within God's harbor peacefully
For all eternity."

Miscellaneous.

THE CAPTAIN'S MONEY.

A Tale of Buried Treasure, Cuban Revolt, and Adventure Upon the Seas.

IN FOUR PARTS.

BY JAMES FRANKLIN FITTS.

[*Copyrighted 1887.*]

Yet one thing further we must record that occurred in the cabin before the Captain and his guest left it, before Mr. Hardy came down, and before Louis Hunter had flitted like an uneasy spirit away.

The Captain had his hand on the knob of the door, with his cap in the other hand, when a curious hesitation on the part of Crawford arrested his steps.

He looked inquiringly at him.

"You wanted the whole truth," said the young man?

"Well?"

"You are treating me nobly, sir; I am deeply affected by it. I feel that any concealment from you, after what has occurred between us, would be unjust to you, unworthy of me."

"Out with it, then."

"Captain Willis, not only was I gladdened to recognize you this morning as the generous sailor I saw on the Paseo yesterday, but your vessel seemed very familiar to me. It seemed so from the name I read on her stern as I came on board. That name is very dear to me. Here, sir, is the picture of the lady to whom I engaged myself. Look at it."

The Captain took the daguerreotype. He looked at it; he looked at Crawford. Astonishment was at first written on his rough face, then a broad smile illumined it.

"Why, you young rascal—I can't believe my eyes! That's my daughter Nellie."

"THAT'S MY DAUGHTER NELLIE."

PART II—CHAPTER I.
INCIDENTS OF THE NIGHT.

Slowly and superbly the great round moon rose over the southern seas and poured down a flood of light on the wide waste of waters. No land was now in sight; the Cuban mountains had sunk below the horizon, and the nearest low land of the Bahamas was far to the northward. The wind held steady, veering now more to the southward, so that the bark held easily on her course, which was now northeast by north. A gentle swell agitated the surface of the sea. For thirty rods astern the foaming track of the vessel could be seen. A solitary sail far to the eastward, visible at sunset, had now faded from sight. The constellations came out, hardly dimmed by the splendor of the moon, and shone with a brightness unknown in higher latitudes.

Such a night as this aboard ship Captain Willis had never seen; indeed few masters of vessels had. His good ship was speeding along through the water at a rate that bade fair to make this voyage remarkable for its brevity; but the unruly human elements aboard made his eyes almost sleepless, his heart anxious. He had calculated that it would be possible to reach Nassau before the following night, where he had determined to make an effort to get rid of the worst elements of his crew, even if he had to continue the voyage short-handed. That night he and Crawford watched and took the wheel alternately with the mate and Dick Purvis. Mr. Hardy had divided the crew into watches, had instructed them in the duty and hours of the watch, and carefully struck the bells himself, or had Dick do it; but not for a moment did he or the Captain put the slightest confidence in the crew.

About midnight the mate was keeping watch, with Crawford at the wheel. The Captain awoke from a doze, and saw Purvis coming aft.

"How is it, Dick?" he asked. "What do you find for'ard?"

"Very little to speak of, sir," replied the seaman, scraping his foretop. "I've tried hard to get familiar with some of 'em; but they fight dreadful shy of me. Not a word would any of 'em say in my hearing, till they found I didn't understand Spanish, and since then they are jabbering pretty much all the time. The niggers look at me in an ugly kind of way, now I tell you! This morning they would have nothing to do with the Cubans or the stowaways; now they're all cheek-b-jowl together, chattering Spanish. The stowaways can't talk it; but I believe such rascally-looking chaps as they are can be made to understand villainy in any language."

"Have you seen Mr. Hunter?"

"Yes, sir—he was near the forward ladder a few minutes ago. There he is now."

The Captain jumped up and started toward the figure that had just appeared from amidships. The figure receded as he advanced. With a loud and peremptory "Heave to, there!" he rushed forward and caught the man by the arm.

"Louis, is this you?"

The face, turned silently to him in the moonlight, showed him that it was as he said.

"Now what do you mean by evading me in this fashion? What in the deuce is the matter with you? Don't you see that I've got a turbulent and mutinous crew aboard, and that I want all the friendly help I can get?"

"You've got something else aboard that seems to interest you mightily," sneered Louis. "You've got an escaped filibuster; and I suppose you don't mean to come into Cuban waters again, after what has happened."

"I'll take no instructions from you nor any man about what course I shall pursue toward a brave countryman, hunted by the minions of Spain."

"I never supposed you would; so allow me to bid you good-night."

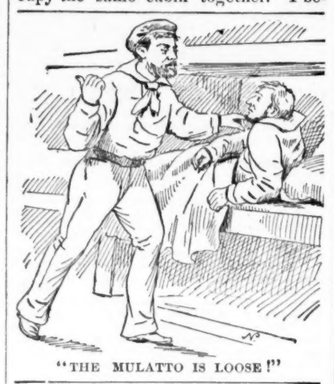
"Louis, listen to reason. Henry Crawford is a man whose acquaintance would honor any of us. I want you to see and talk with him."

"Excuse me. I'm not very particular about my associates, as I believe you have told me several times; but I have never taken them from political refugees."

Captain Willis tried hard to suppress his anger. He well understood that Louis was trying to anger him, so that he would abruptly end the conversation.

"Just tell me what your conduct means," he demanded.

"That's not hard to tell. You said to me yesterday that the time was fast coming when you and I could not occupy the same cabin together. I believe that time has come. Anyway, I refuse to occupy it with the company you've got there now."



"THE MULATTO IS LOOSE!"

"That was a hasty remark, Louis. You remember how you had angered me? Let us think no more of it. Here's my hand, nephew."

Louis took the offered hand, but released it immediately without a grasp.

"Now go back to the cabin," the Captain said, half coaxingly.

"Not I! You've chosen your company. I'll choose mine. I can make myself quite comfortable forward."

He stalked away, leaving the Captain in deeper doubt than ever as to the meaning of his conduct.

An hour before daylight Dick Purvis nudged the mate, and awakened him from a fitful sleep.

"What's the matter, Dick?"

"Something bad, sir. I'll whisper it to you; we'd best make no alarm yet. *The mulatto is loose.*"

"Great God, how can that be?" the mate exclaimed. "I shackled him myself, and have seen him every two hours since. Where is he?"

"I only know he is gone, sir, with the chain unlocked that fastened him to the ring in the floor. I suspect he's hiding somewhere in the forehold."

"He must have had help."

"Surely, sir."

"Well, the devil is aboard this ship, and no mistake. I hate to disturb the old man, but he must know it."

The startling intelligence was communicated to the Captain, and it banished all further sleep till sunrise. The mate took the wheel, and Crawford and Purvis watched with the Captain; but he said little. The threatening events of the last few hours were making an impression upon him which it was idle to try to shake off; he made no answer to the reassuring words addressed to him, but remained sunk in deep thought.

PART II.—CHAPTER II.
THE SHADOW OF A NEW DAY

The hour still lacked something of dawn. The moon was dull in the West, and the stars were paling. There was light enough to see the length of the deck, where the view was not obstructed, and as yet there was no sign of outbreak. The Captain walked forward with Crawford, saw that the watch were awake, and that the lookout was at his post, and stopped a moment to observe the men. A silence fell upon them as they saw him.

"Where's that big mulatto?" he abruptly asked. "Can any of you tell me?"

There were several head-shakes, and two or three negatives in Spanish.

"May be jump overboard," one of the negroes growled.

"Hiding, likely," one of the vagrants ventured.

"Now mark me, men!" the Captain said. "You know what manner of man I am: I'm not to be fooled with. Some of you know where that fellow is. We shall be at Nassau before dark, and then that man will go ashore in irons. He'll go if it takes the whole British garrison to bring him out. You hear me? Just tell him *that*, and that he'd better deliver himself up peacably."

The two walked aft again.

"I don't think I'd have told them *that*, sir," said Crawford.

"Why not?"

"It may make them more desperate."

"Pshaw! Such fellows as those negroes are always desperate. What they need is to feel the strong hand on them. They hadn't heard from me for several hours, and I thought it time to show myself to them again."

He stopped and leaned against the long-boat. His companion was silent.

"Another day of this suspense and vigilance, and we'll make port again and rid ourselves of these pests."

"I hope so, sir."

The Captain said nothing for a moment, and then suddenly asked:

"Mr. Crawford, are you superstitious?"

"I don't know that I am." He added, with a laugh: "I suppose I'm not enough of a sailor for that."

"You say that in jest; but there's truth in it. Now look at me. You see what I am; you know me pretty well. You wouldn't take me for a man likely to give way to presentiments?"

"Certainly not."

"And yet, I tell you that in the hours of this night that has just ended the belief has been forced upon me that I shall not see another sunset."

"You'll see many hundreds of them, sir. I don't wonder you are disturbed in mind by what has happened on this vessel in less than twenty-four hours; but I'm confident the worst is over."

"You think I'm nervous and flighty, as most men would be in my place. You are wrong. If you should feel my pulse you would find it as steady and strong as the beat of the pendulum. I am not governed by any weak fear; it is simply a powerful presentiment of speedy death that has come to me."

His words were so solemn that Crawford could at first make no reply.

"Still," he at last ventured, "you must admit that there is no peril that threatens you that does not equally threaten me."

"Not at all. My belief is just as firm that you will escape these dangers and live long to tell about them. Just look back at what has happened to you in the past month! Fate has been wonderfully kind to you, and will continue to be, I verily believe. You are marked for life, not death. No man can do the things that you have done, without having what I should call *a firm grip on existence.* Don't ask me how all this seems so clear to me; I feel it—but I can no more explain it than I can tell what made this wind rise, and what keeps it blowing."

There was absolutely nothing that Henry Crawford could say. The Captain's manner warned him that what had been said was but the prelude to something of great importance that was to follow.

"It is not a mere idle whim that leads me to tell you this," Captain Willis went on. "If I supposed that we were all to be involved in a common disaster, and that none of us should ever sail into Boston harbor, you would have heard nothing of this from me. It is because I thoroughly believe that your lucky star still attends you, that I now speak to you as one man might speak from a dying bed to another."

The rough man was softened by his own words. His voice faltered a little; he even grasped Crawford's hand.

"Nothing has been said between us about my daughter since you surprised me with her picture," he continued. "It's not necessary to say that I approve her choice. She's a sweet, good girl, my lad—that you know. She hasn't seen as much of her father as a child has a right to; but I've always loved her dearly. Didn't I name this ship after her, when she was a little slip of a thing? You'll do just as you said, I am sure; you'll go back, quit adventuring, take up the old, steady ways of the world, which, after all, are the best ways, marry Helen, and settle down. You must be kind to her mother, too; she's a good woman."

There was just a dash of petulance in the young man's voice as he replied:

"All this is very pleasant for me to hear, Captain Willis, and I'm proud of your confidence in me. You'll pardon me when I say that you are speaking of things as already accomplished that I fear are years away. If hard work and determination to succeed can count for any thing, I shall marry Helen Willis some day; but you will remember that I told you I was penniless."

"AH, MY BOY, THE GIRL ISN'T PENNILESS."

The Captain softly chuckled as he patted Crawford's shoulder.

"Ah, my boy; the girl isn't penniless. When I die she and her mother will divide fifty thousand dollars."

In his surprise the young man mechanically echoed the words.

"Yes, sir; and if this ship comes into port again the value of ship and cargo will add twenty thousand more to it. There's no insurance on either; if they're lost it will be a dead loss; but that good pile of gold and silver is put away safely, beyond all fear of accident."

The old man chuckled again.

"Now, Henry Crawford, I've a very strange story to tell you. Yesterday you laid your whole life open to me; I'm going to be just as candid with you. What would you say, to be told that neither the girl nor her mother knows of the existence of that money, nor where it is? That's just what I tell you. It's my secret, and I've carried it for years; foolishly, perhaps—you shall judge of that when you have heard the story. For Helen's sake, for your's and her mother's, you must have this secret, so that the money may be saved to you three."

The Captain pulled his whiskers thoughtfully.

"I said I would be candid; I will. Of course, this has been foolish of me; my sudden death at any time would have deprived my wife and daughter of what I have always meant they should have. But you shall hear the whole story, and see what it was that has moved me to act as I have."

Crawford listened intently to the narrative that followed. Both men stood with their backs against the long boat; in the boat was Louis Hunter, concealed by a tarpaulin, his eager ears drinking in every word.

THE CAPTAIN'S STORY.

I spoke of the sum of fifty thousand dollars (began Captain Willis), that I had secreted.

Why did I hide it? why conceal any knowledge of it from my wife and child? for, certainly I love them as much as most men love their families.

To answer these questions, it will be necessary to go back to the beginning, and make you acquainted with my whole life.

The amount that I have named is considered, I believe, quite a fortune. Three times before, I have been in possession of almost as much; three times I have lost all by the misconduct of others whom I trusted. My reasons for hiding this money, and locking the secret in my breast, have much to do with my previous losses. You shall hear.

You have lived in Boston, and you know where Provincetown is, across the bay, on the point of Cape Cod. I was born in that old town something less than sixty years ago. My parents were as poor as poverty could make them, and died when I was thirteen years old. I never went to school a day in my life; what knowledge I have got, afloat and ashore, has all been picked up. I ran about the wharves, waited on the sailors, heard their wonderful tales, and when I was sixteen I made my first voyage before the mast.

Now look on, eight years from that time. With all kinds of hard knocks, and such privations and perils as sailors only know, I had steadily risen until I was first mate of a fine ship in the India trade. I had none of the sailor's ordinary vices. I was steady, temperate and industrious. To say that I was bound to rise is only to state the fact.

I had accumulated a large sum of money. A friend on Long wharf of whom I had a high opinion happened to learn it, and he asked me one day to deposit it with him.

"I can use it to advantage," he said, "and pay you interest on it. You can have it whenever you want it."

Perfectly unsuspicious as I was, and with the highest confidence in his integrity, I handed the whole sum over to him, not even taking his receipt for it. On my return from my next voyage, I found he had fled the country, taking many people's money with him—mine among others.

This was my first rude discipline from the world; and I suppose I did not bear it as well as those misfortunes that followed later.

Six years passed, and my earnings, savings and tradings on my own account in the countries to which I sailed had quite replaced all I had lost. Absurd as it may seem, I used to carry it about with me, and got well laughed at for it. My captain joked me unmercifully on the subject, and one day he persuaded me to deposit it in the bank where he kept his account. It was the old story in a different shape; the bank burst in three months, and I lost every cent.

I was now thirty years old, and was beginning the world over again. A year later I was master of a ship, and was laying up money fast. I was so bound up in my duties and loved the sea so well that the idea of falling in love with a woman never occurred to me—till it happened. In fact, at thirty-five I knew nothing of women; so you see I was just the man to fall an easy prey to one of the worst of the sex. She was a dashing, black-eyed beauty of twenty-five, and had three husbands already in different parts of the country. This, of course, I did not learn till it was too late, and I believed her story, that she was the widow of a bankrupt Boston merchant. I first met her when she came on board my ship with a party of visitors, to look at it; I showed them all about, explained every thing to them, and entertained them in the cabin. She put forth all her powers to fascinate me, and she did it. Some of my friends warned me, but it was no use; my head was completely turned. We were married in two weeks from the day of our first meeting. Before that, the woman got me completely into her clutches; I was merely the puppet that she made dance. I bought a house for her in her own name. I handed over all my money to her. In ten days after our marriage my ship sailed for Bombay. I ought to have become suspicious at her refusal to go with me; but where is the man deep in love who is not blind as a bat? It has always been so since the days of Adam. The next week after my departure she sold the house, drew the money from the bank, and ran away with another man. I heard of her death some years later.

This blow wounded me most cruelly, for I was really attached to the worthless woman. I became a kind of misanthrope, but never lost my enthusiasm for my ship and the sea. Long before I owned and sailed my own vessel, I used to have an interest in the cargo, and was always buying unusual freights abroad, and selling them at home for a large profit. So it happened that in my fortieth year I was well to do again; in fact, was far along toward the making of another small fortune. If any man had told me six months before it happened that I should ever marry another woman, I should either have called him a liar, or knocked him down—perhaps both. It all happened in the most natural way in the world. I had a first mate, an elderly man and an excellent seaman, to whom I was greatly attached. He had sailed with me several years, and was always faithful and true. I knew nothing about his family, except that he had a wife and daughter in Provincetown. One day at Rangoon he was trying to keep the peace between two drunken seamen, when he was severely stabbed by one of them. He lingered a week in the hospital; I would not sail without knowing his fate, and I was with him when he died.

"God bless you, Captain Willis," he said, with his last breath. "You've been a good friend to me; I couldn't have had a better."

I was melted to tears at sight of the good old sailor dying there in a strange land.

"My dear old shipmate," I said, "I owe you more for your fidelity than I have ever paid you. What do you wish me to do?"

"Be good to those I leave behind me, sir."

I promised him that I would befriend his family, and he died contented.

Back at Provincetown, I looked them up. The place where they lived has something to do with my story, and I will say a few words about it.

If you go up from the harbor there, well out of the town, back to a sightly place that overlooks the whole bay, and gives you glimpses of sails ten miles out at sea, you will find a large, rambling old frame house, two stories high, standing broadside to the harbor. You could not well miss it; there is no other like it in the town, and every body knows it. In the old colonial days, more than a hundred years ago, a retired sea-captain built it and lived in it for twenty years; since which time it has seen all kinds of vicissitudes, and been inhabited by dozens of families. It was stoutly framed and well built, after the fashion of our fatners, or it could not have endured the uses that it has been put to, and had two timbers of it left. As it was when I first visited it to condole with the mate's widow and child, and nearly as it is now, two-thirds of it is badly dismantled and out of repair, leaving four rooms in one end above and below that are habitable. In these rooms Mrs. Wayland and her daughter lived. Inquiring my way to the place, I learned from several mouths that the unoccupied part of the house was certainly haunted. I was told of cries and shrieks that had proceeded from the upper stories on windy nights; of the rattling of chains, and noise of pistol-shots and clashing cutlasses that had been heard from there by belated and terrified passers. It was generally thought (among the people who believed these things at all) that the sea-captain who built the house was a buccaneer, and that the spirit of himself and his crew had occasional possession of the place.

I found the little family of the deceased mate poor and in distress. The earnings of poor Wayland had for years gone to satisfy the creditors of other days; they were in arrears for rent, and were threatened with expulsion from the old house. In a fit of anger at the landlord I purchased the place outright, giving for it twice as much as it was worth. As delicately as I could I relieved the widow and child. They were grateful, of course; the widow, consumptive for years, was sinking under the blow of her husband's death. The daughter was just half my age. I became interested in her, and before long persuaded myself that I wanted to marry her. A week before her mother died we were made man and wife. I repaired the old house, and it has been our home since, though there are still many rooms in it unfit to be occupied. When I talked with my wife about the place she told me that neither she nor her mother believed in ghosts, but that they had heard some very strange noises at night in the other part of the house, and that her mother had more than once gone into hysterics over them.

This, with what I had heard from others, gave me my clew to my future course.

In my brief stays in Provincetown between voyages I have skillfully given out hints that I believed that the spirit of the old pirate, Lobdell, roamed through the house on stormy nights. I have really enjoyed seeing the shudderings and pale faces that my stories on this subject have caused. When I have been asked how I could live in such a place, I have replied that I had it on my hands and nobody would buy it. This has satisfied people.

In such a community, made up largely of sailors and their families, there is of course much superstition. These tales about the Lobdell place were generally believed because people were ready to believe them.

But why did I wish to give my own property so bad a reputation?

Simply because I had made a treasure-house of the cellar under the unused part, and nothing was so well calculated to protect it as these reports. The place is shunned. There is not the least danger from robbers.

Down in the old damp cellar, where I suppose no foot but mine has passed for fifty years, I found excavated a great hole, and in it a chest. Over the opening is a stone slab, so heavy that it has tried my strength severely of late years to raise and lower it. Over the slab is piled a lot of mildewed canvas, rotting planks, and worthless cordage, stored here by Captain Lobdell himself. The great deep chest is full of stout bags of gold, with a few of silver. Year by year I have added to the store, for twenty years—till it now holds full fifty thousand dollars.

It is rather strange, but perfectly true, that I found this place of concealment there, chest, slab, and all, just as I have used it. I suppose the old buccaneer made much use of it in his lifetime.

My visits to the old cellar have always been made in the dead of night, or at times when my wife and daughter were away. There is not anything certain in this world; but among the few things that are certain, I believe you may put down the fact that the hiding-place of my treasure is not suspected.

I return to my wife and daughter. Nellie is my only child. I have told you that I have them both. She is all that a fond father could wish; and her mother—God bless her!—she has shown me how noble and good a woman can be. It's little time I have spent with them ashore for the last twenty years; but I think both would say that I have been a kind husband and father; that I have looked well after their comfort, and always provided them with money.

Sometimes Helen has visited her mother's relatives in Boston, where, as I understand you, you met her.

I'm talking to you, Mr. Crawford as though I should be in another world twenty-four hours hence. You'll marry Nellie. I want you to trust her as I have never trusted her and her mother.

There have been times when my dear wife has sat upon my knee, and rather timidly said: "Tell me something of your affairs, Aaron. You give us money enough; but if you should be drowned at sea, pray what should we know about your property?" And I have always put her off with some joke about my not being drowned on this voyage, or her ability to get another husband. I have said things that pained her; but I have never hinted at the truth.

Why?

She has ever been worthy of all confidence; Nellie has been worthy of it.

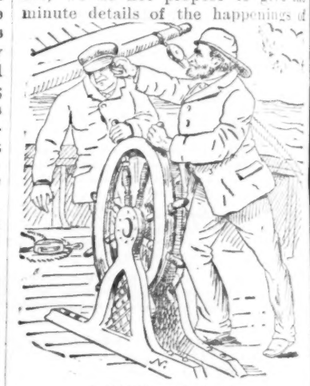
I can only say that my heart was soured by my losses, and by the cruel treachery I had met with. When the stunning blow of my first wife's betrayal of me fell upon me, I swore a great oath that neither man nor woman should ever again have a chance to dupe or swindle me. With the woman that I afterward took to my bosom, this was a pledge far better broken than kept. But I had made it to myself; my experience justified it, if anything could, and I perversely clung to it.

This, Mr. Crawford, is my story. I make no apologies for my conduct in the light that is now given me, I should have acted differently. I see now that the question as to whether Nellie and her mother shall have what will rightfully belong to them when I am gone should not depend upon whether you will escape from the dangers of our present situation. But you will escape—I know you will. I don't often pray—not as often as I should—but I did pray an hour ago that you might be spared, for the sake of Helen and her mother—and for your own sake.

Now you know all. If you survive me, you will know what to do. If you go to the old house at Provincetown without me, tell them—tell them I loved them dearly. I think they know it now. Be good to them.

PART II.—CHAPTER IV.
THE MAN AT THE WHEEL.

The day went on till the middle of the afternoon. As landsmen keep time, it was near four o'clock. In the great events impending over this vessel and all who lived and moved upon her, we do not propose to give the minute details of the happenings of



A POWERFUL BLOW.

the day. Shortly after meridian the practiced eye of the Captain detected signs of shoal water, and soundings were at once taken. From ten fathoms the line soon shortened to six—then to four. The bottom soon became visible, appearing to be a white clay. Far in the distance the Captain with his glass sighted the shores of Elephmra. Small islands were passed. The water shoaled more rapidly. Three fathoms were reported—then two and a half. Sail was laboriously shortened, the mate literally driving the crew to the yards. The Captain went below to consult his charts.

The bark now crept along slowly and doubtfully, with frequent changes of course. The Captain stood near the wheel, giving continual directions. At one time the water shoaled to less than two fathoms.

"The island of New Providence is just ahead, Mr. Hardy," said the Captain. "I was in hopes to work round to Nassau to-night; but I dare not try it. I know enough of the Bahamas to be cautious of trying to keep a course at night in shoal water. I think we'll tie up to the shore yonder, if we can find a good anchorage, and wait till morning."

It was now near sunset. Dick Purvis came to relieve the mate at the wheel. Mr. Hardy walked forward. He stumbled and fell over something near the fore-ladder.

He rose to his feet. What mystery was this? Dick Purvis had just relieved him at the wheel—here lay the body of the man himself, hatless, coatless, his skull crushed by a savage blow from the capstan-bar that lay beside him smeared with blood.

A horrid suspicion of the truth flashed upon him. With a warning shout he rushed back to the wheel.

"Due north!" he shouted. "Purvis, what's the matter with you?"

The man at the wheel is an automaton; he obeys the orders given him, and in obeying them, he always repeats the order.

On this occasion the Captain's direction was not repeated. He gave it again.

There was no answer. The man's cap was pulled over his eyes; he bent low, as both hands grasped the wheel, so that his face was concealed.

"North—due north, I say!" yelled the excited Captain. "You fool, she's fallen off three points already."

And still no answer. The wheel flew round swiftly in the helmsman's hands, and the vessel's bow, obeying the direction, lay straight toward the shore of the island.

With a furious yell the Captain seized the wheel.

The man resisted. A powerful blow from the Captain's fist caused him to quit his hold and stagger back. His cap fell off; the man was revealed. The coat of poor murdered Dick Purvis, but the face and form of Louis Hunter.

He waited not comment or attack. Without a word he darted forward, and was lost to sight.

A MERRY HEART.

'Tis well to have a merry heart,
However short we stay;
There's wisdom in a merry heart,
Whate'er the world may say.
Philosophy may lift its head
And find out many a flaw,
But give me the philosophy
That's happy with a straw!

If life brings us happiness—
It brings us, we are told,
What's hard to buy, though rich ones try,
With all their heaps of gold.
Then laugh away—let others say
Whate'er they will of mirth:
Who laughs the most may truly boast
He's got the wealth of earth.

There's music in a merry laugh,
A moral beauty, too;
It shows the heart's an honest heart
That's paid each man his due,
And lent a share of what's to spare,
Despite of wisdom's fears;
And made the cheek less sorrow speak,
The eye weep fewer tears.

THE SPARROW'S DEATH WARRANT.

Big Convention in Central Park in a Billicose Mood.

There was a convention yesterday in the Central Park. Owing to the confusion on the Mall the convention was held under the trees on the Fifth avenue side, near Sixty-fifth street.

All the members were in high feather. The subject that had drawn them together was the bill now in the hands of the governor making it a misdemeanor to feed a sparrow. The chairman was a lively, fat little fellow, who came to the meeting covered with dust. He had had a little difficulty on the road with a friend who had named "first call," on a bluebottle fly. His name was Jack—plain Jack Sparrow. In calling the meeting to order the presiding officer declared the new law which makes it a misdemeanor for any person to feed or shelter sparrows was an outrage. It was a bill that was aimed at every bill owned by every member of the convention. This remark made a twitter in the audience, and the chairman lifted one leg up under him. tucked his head to one side and looked very wise.

"I live in one of the city parks," said one of the speakers, "and never did any of an injury. My family for many generations have been fed and taken care of by visitors of the park. We never had to use our claws by scratching for our own living, and even when we saw the worms and bugs on the trees, we kept away from the wild creatures, although they sometimes annoyed us dreadfully."

The church sparrow followed. His constituents had sent him to the convention to right a grievous wrong redressed. "A great beast of a sexton has been tearing down the vines that cover the front of our church and destroyed thus the shelter where hundreds of our homes have been made for many generations. The minister of the church is as great a brute as the sexton, for I heard him say only last Sunday, 'I can't help myself preach for those sparrows. They disturb the peace of the whole congregation. The trustees talk of moving up organ to avoid the noise of this neighborhood when the only noise to be heard is that of the birds. Pull down every nest and drive them off or they will drive us out.'"

A house sparrow, who had built his home over the window of an editor's room came next. "My grievance is one that is heartrending," said he. "My family has the best place imaginable under the brown stone carvings of a window. But there is a hateful creature who comes home just before daylight and lights the gas in the room, where he opens the windows and smokes and smokes until my family are nearly suffocated. Then, when we get up about sunrise and talk to our neighbors across the street he uses the most horrible language and accuses us poor innocent birds of disturbing his sleep. Why doesn't he take his pen up at night and write his editorials in the daytime? I believe he is responsible for the new law, if any one is, for he has been talking about our being accountable for the loss of so many shade trees by driving off insectivorous birds."

A member from New Jersey took the floor. "The State that I have the misfortune to represent," said he, "has long been the enemy to our race. They shoot us over here and then sell us in Washington Market for reed birds. The farmers are our enemies. Sometimes we find a young girl or a child who will try to feed and protect us, but because we prefer the food put out for the chickens and that which we find in the grain fields to the bugs and worms they want us to eat, they kill us without mercy. Their law is that sparrows can be killed every day in the year."

Just at this point Cock Robin spoke up. "What were you brought here for, if it wasn't to eat up the measuring worms that are destroying all the shade trees?"

This stirred up the belligerent sparrows, and the City Hall Park bird called out, "Don't give us any of your sass, or we will lick you as we have every bird that has been in our way." "Yes," said a cat bird, "You have driven us away from our woods and orchards, where we were a blessing to the farmer, protecting his fruit from insects that are now killing the trees all over the land." The oriole, grosbeak, cherry bird, woodpeckers and flycatchers joined in the chorus against the sparrows. "Between the sparrows and the women's bonnets we have been almost exterminated," said a Baltimore oriole, as he fluttered his beautiful orange and black plumage. "So it is with us," chimed in the bluebird. "You have driven us from the homes we made in the low trees and old fences, and we, who were the first to welcome the farmer in the spring, have been scarcely able to fly from tree to tree for the bugs and worms that we feed upon. You are the enemies of man, and of his friends. You are not pretty to look at, and you have not even a voice for singing, you screechy, quarrelsome things."

This was too much for the sparrows, and the convention broke up in a row. As usual, the sparrows got the best of it.—*N. Y. Herald.*

The essential difference between a good and a bad education is this, that the former draws on the child to learn by making it sweet to him; the latter drives the child to learn, by making it sour to him if he does not. —*Charles Burton.*

Bill Nye on Economy.

I read an essay recently on the inside of a valued exchange on the subject of economy, which greatly interested me. It related to the great expenses which really aggregate from little ones and dealt with the matter of daily papers, bootblacks, shaving expenses, baths, etc., and showed how millions of the people's money were annually squandered in this way that ought to go towards buying books. The article set me to thinking, and I resolved to investigate it. I was more especially taken with the idea of extravagance in the matter of barbers and barber shops. You can go to a gorgeous shop and pay fifteen cents and a tip for a shave, or you can go where you can avoid the tip, or you can go to a ten cent shop, or you can get shaved on the Bowery for five cents, or you can ignore the whole business and let the wind blow through your whiskers.

Last week I was thunderstruck when I found how much could be saved by changing from a fifteen cent barber to a five cent barber and keeping it up for a year. Counting 300 days as a fair estimate of the number on which I would be apt to shave, I found that by this change I could have at the end of the year $30, with which to buy books or cross barred trousers or any other means of intellectual improvement which I might choose. I could buy one of those expensive books that Mr. DeLux occasionally gets out, or I could hear Patti, or buy a small yet fragrant dog for $30. I could also buy myself some more hair or get my teeth filled. I could take a classical course on the banjo or buy an interest in a bird dog with $30.

But I wanted, more than anything else, to get more books. I wanted a new photograph album most of all. An album with illustrations in it, to lay on the parlor table and explain to strangers in low, passionate tones, is a never ending source of pleasure to the thinking mind. When a frontispiece showing the proprietor as he looked with side whiskers, and later, a view where he was photographed with chin whiskers and holding a war time plug hat in his swollen hands; with a picture of grandmother holding a bible as though it might be a glass bomb, and a front view of a sightless child that makes up for its total absence of eyes by introducing a soul-stirring mouth that would make a golden haired ball of North Carolina butter turn white in a single night—with all these little specimens of plastic art, I often think that a photograph album will do more toward entertaining a mixed company than any other literary work with which I am familiar.

So I went into a low priced barber shop a week ago and began to save $30 for the purpose of adding to my library. I soon discovered that in a five cent barber shop you get less consideration and a lower grade of lather up your nose than elsewhere.

I believe that the man who shaves you for five cents makes his own soap. Possibly he works up some of his fattest patrons that way. Anyhow, the soap he uses smells badly and tastes worse than any soap I have ever participated in. At this price of shave one saves financially, but loses cutaneously.

The chair I sat in was not a good easy chair, and the spiral springs in it occasionally had to come to the surface for more air. I became very much attached to one of these springs, and the ten cents I saved on the shave I had to pay a tailor down town who trephined my trousers for me.

The chair was also mentally a wreck, and its memory was failing, I thought. Just as I would relax my muscles and close my eyes this tottering old chair would forget itself, and the worn out trigger that held the head rest would slip about nine cogs. Then with a low death rattle it would fall about a foot and disturb my intellectual faculties. You can get shaved quicker for five cents than you can for fifteen, but the towels are more clammy and the bay rum is rather more of a chestnut, I judge.

Suffice it that I am not going to continue the course of economy that I had inaugurated for the year, for I am opposed to the hoarding and accumulation of a surplus. Money is tending too much toward centralization any way, and I do not want to encourage it.

While I may not be able to secure the books which I contemplated buying with my savings, I can visit the chamber of horrors at the Musee and improve my mind in such ways by actual observation.

We do not get all our education from books. We may easily obtain many refining and ennobling ideas from other sources than the musty tomes which decorate the shelves of our libraries.

One of the brainiest men I ever knew, if I may be allowed the temporary use of that term, a man too who had succeeded in amassing quite a fortune as a result of native shrewdness and knowledge of human nature, once admitted to me in a sudden burst of confidence, inspired perhaps by too much wine, that he had never read either of my books. And yet he had concealed this gross ignorance for five years and amassed a fortune! While this is a sad commentary on American galvanized illiteracy, it still shows that a man may be almost criminally ignorant in this country and yet acquire scads.—*New York World.*

A Victim of Misplaced Confidence.

He was an agent for a step ladder. Not an ordinary step ladder, but a combination, convertible, extensional, generally utilizable step ladder. He greeted the lady of the house at a White street residence, last Friday afternoon, with a winning smile, as she opened the door in response to his knock, and proceeded at once to expatiate and illustrate the many advantages of his step ladder over the ordinary step ladder. It was just what every model housekeeper could not possibly do without; that fact any intelligent woman could see at a glance. It could be used in cases where every other step ladder could not; an attachment here made it a most comfortable chair for a grown-up person, another attachment there converted it into a high chair, and still by other combinations it could be made into an ironing table, a cradle, a drawing room what not, or a garden wheelbarrow. And then it was indestructible, and would last a family a lifetime. Why, it would bear the weight of four men. That was where the agent made the greatest mistake of his life. To prove its strength he gave a spring in the air and sat down on top of it hard. That is, he meant to. For as he landed, there was a terrific crash, and the air was filled with flying bits of wood that made the lady of the house think of the time that she was in the coal cellar when a load of kindling wood was dumped in the cellar. Then there was a dull, sickening thud as the agent landed flat on his back on the piazza. She laughed as he slowly crawled from beneath the wreck and gazed ruefully about for a moment. Then he said, "You can use it for kindling wood," and walked sorrowfully away.—*Orange Journal.*

Ingenious Girls.

We have just heard of a story of three very ingenious young ladies that is out of the ordinary. These young ladies are all about the same age and size, and by a singular coincidence were all to be married about the same time. They were all ambitious to have swell weddings and stunning outfits, but their purses were not long enough for both, and to possess the latter even was a financial puzzle which gave them many a sleepless night. Finally they put their heads together and hit upon a plan. To avoid any unpleasant gossip among their mutual friends and inevitable companions, which is always odious, they decided to give up the big wedding, but they would have the bang-up outfit by pooling their moneys. No. 1, who was to be married first, was to make a bargain with the dressmaker to make any alterations desired in the trousseau after the wedding was over and the three were to go together to select it, which they did, and the dress was made up in the very pink of the fashion, with point lace enough to exhaust the stock of a Worth, and bride No. 1 was married. The ceremony over, the trousseau was turned over to No. 2 and she took it to the dressmaker for alteration according to contract, and in it she was married, after which the second refitting was done and again the brilliant outfit stood before the marriage altar and a third bride was the envy of the few guests present because of the gorgeous bridal decorations. How was the dress paid for. No. 1 paid half the bill because she had the first wear. No. 2 and No. 3 shared the other half. No. 3 was willing to pay as much as No. 2 because, though she did not have the privilege of the second wear, she, by mutual consent, kept the dress.—*Cincinnati Times-Star.*

Packing Flour for Export.

U. S. Consul Strickland, of Goree-Dakar, Africa, says, in his report to the state department, that "before American merchants can fairly compete with Europeans in the opening markets of the world, they must learn that in some countries superior packing is held to be a factor of prime importance; that in places where good coopers are not to be had—and there are but few practical laborers—egg-shell packages, no matter how choice the goods they contain, are to be discriminated against. And this American fault in packing is the more to be regretted, because it is precisely in those countries where the best packing is of necessity recognized, that the profits are always the greatest. Among the articles which Americans are interested to export abroad, but which frequently are not packed sufficiently well for the purpose, flour may be instanced as deserving, perhaps, the first notice. Almost all new-developed countries consume flour largely and as payment in such countries is usually made in raw products which Americans require for manufacturing purposes, there is a double motive for dealing with them direct, which dealing Americans should not forego by refusing to take into account the necessities of their situation. Now, in such countries where teams are always scarce, such articles as flour have to be transported quite long distances by rolling, with the result, in case the flour packages are American, of having a continuous white trail of flour all along the route, interspersed here and there with heaps of it mixed with dirt where heads have fallen out, so that the condition in which a shipment of American flour finally reaches the warehouse of the foreign buyer is often such as to excite his disgust, if not indignation. The buyers of flour in intertropical countries are seldom men who like making up for omission of shippers by coopering barrels themselves under a boiling sun, and the upshot of the matter is that they give their preference to foreign flour, because the packages are better, only dealing with Americans enough to keep their European agents from imposing high prices on them. There is almost prejudice against American flour barrels, because they do not sufficiently exclude the air, which causes the flour to spoil quickly. French flour barrels, besides being lined with paper, have thirty hoops each, and the heads well secured. Such packages preserve their contents against even wet, and other things being equal, it would be indeed surprising if foreign flour thus protected were not preferred in every competitive market.

American flour barrels for export should have at least sixteen well-driven hoops each; the chines should be well protected and the heads well secured against falling out. Paper lining is undoubtedly an advantage, but, with the barrels made strong and tight, other refinements may not be considered so necessary.

Little Tiffs.

What absurd little things people quarrel about! What trivial matters cause ill-feeling in families! The mutton being roasted too little, or the beef too much; an opinion about the temperature of the house or the style of curtains that ought to be bought for the front windows; the definition of a word, or its pronunciation, are things that might be argued pleasantly about, but surely are not topics worth a quarrel when peace and good will are of so much importance in the home. A little ill-feeling is like a little seed that may grow into a large tree which will shadow the whole house. Many a man and woman must look back with regret on the hasty word or the cold reproach which was the entering wedge that split a household in two, and yet how few make a point of uttering the soft word that turneth away wrath! Quarreling is one of the original sins, I suppose, for the babies sitting on the floor will fall out over their toys, and one will push down the block tower that the other has built with great pains, and there will be a "name called," and a "face made," and a slap given, and mamma will be called to settle a quarrel, and no truth can be got at, for each is right in his own estimation, and each has been wronged by the other. So it is through life. A reasonable quarrel about great matters may be settled, and the parties made friends again; but little tiffs about nothing are such foolish, intangible things that reason cannot overcome them. *N. Y. Ledger.*

Ten Things a Baby Can Do.

It can beat any alarm clock ever invented waking a family up in the morning.

Give it a fair show and it can smash more dishes than the most industrious servant girl in the country.

It can fall down oftener and with less provocation than the most expert tumbler in the circus ring.

It can make more genuine fuss over a simple brass pin than its mother would over a broken back.

It can choke itself black in the face with greater ease than the most accomplished wretch that was ever executed.

It can keep a family in a continual turmoil from morning till night, and night till morning, without once varying its tune.

It can be relied upon to sleep peacefully all day when its father is down town and cry persistently at night when he is particularly sleepy.

It may be the naughtiest, dirtiest, ugliest, most fretful baby in all the world, but you can never make its mother believe it, and you had better not try.

It can be a charming and model infant when no one is around, but when visitors are present it can exhibit more bad temper than both of its parents together.

It can brighten up a house better than all the furniture ever made; make sweeter music than the finest orchestra organized; fill a larger place in its parents' breasts than they knew they had, and when it goes away it can cause a greater vacancy and leave a greater blank than all the rest of the world put together.—*Philadelphia News.*

Held by a Hair.

It is related of General Manteuffel, the late German military Governor of Alsace, who hated all that was French, that he once at a public dinner engaged in a dispute with a French diplomat who maintained the superiority of the French workmen over the artisans of all other nations. "A thing so ugly does not exist that the skill and genius of a Frenchman cannot make it a thing of beauty," he said. Angered by the contradiction the old soldier pulled a gray hair from his bristly gray mustache, and handing it to the Frenchman said curtly: "Let him make a thing of beauty out of that, then; prove your claim." The Frenchman took the hair and sent it in a letter to a well-known Parisian jeweler with a statement of the case and an appeal to his patriotic pride, giving him no limit of expense in executing the order. A week later the mail from Paris brought a neat little box for the general. It was a handsome scarf-pin made like a Prussian eagle, that held in its talons a stiff gray bristle, from either end of which dangled a tiny golden ball. One was inscribed Alsace, the other Lorraine, and on the eagle's perch were the words: "You hold them but by a hair."

Gambetta's Glass Eye.

Aurelien Scholl narrates an amusing story about Gambetta. It was only a few days after the famous statesman had had his injured eye removed and an artificial one put in its place. A dinner party at the residence of a prominent literary man living on the Rue Joubert had been arranged, at which were present Edmond About, Sarcey, Scholl and other well-known people. Gambetta was expected. It was his first appearance in public with his glass eye, and it was agreed among the others that it would be in the best taste to make no reference to it. As soon, however, as the popular orator came into the room he placed himself before the mantle-piece and said: "Well, is it a success? What do you think of it?" "Think of what?" "My false eye." Of course everyone went into rapture: "Admirable." "Impossible to detect it." "Which is the real one?" "Perfect," etc. And throughout the dinner Gambetta kept turning from one to the other and expressing astonishment at the perfection of the artificial member. About ten o'clock the guests left their host and were making their way towards the Boulevard when Gambetta, always in a hurry, ran against a big woman carrying a large basket of fruit or nuts on her arm. "Can't you look and see where you're a going?" she asked in a voice that suggested the recent use of stimulants. "Madame," replied Gambetta politely, "we were both a little to blame." The woman, not at all placated, turned round, eyed her opponent from head to foot, and then added: "I don't know what keeps me from mashing t'other eye for you!"

How Rain is Produced.

Did it ever occur to the reader that there is just as much water in the air above him on a clear, bright day as on a cloudy or rainy one? Rain does not come from somewhere else, or if it is wafted over you by the wind from elsewhere, the water that was over you is simply wafted on to some other place. What is said above explains this. Water is absorbed in the air above us, at a certain temperature, and it becomes insensible. Cool that air by a wind draft of cooler atmosphere or by electrical or chemical influences and the moment the air becomes cooler it gives up some of the watery particles that were insensible or invisible at the higher temperature. These small particles thus given out, unite, and when enough of them coalesce, obstruct the light and show as clouds. When enough of them unite to be too heavy to float in the air, they begin to descend; pair after pair of them come together until a rain drop is formed. One of the minute rain drops is made up of millions of infinitely small watery particles.

Air passing over the cold tops of mountains is cooled down so that it gives up a good deal of the concealed watery vapor, and hence little rain falls in the region along the lee side of such mountains. This is why so little rain falls in Colorado and in other places north and south of the State. The prevailing winds blow to west, and the cool tops of the Rocky Mountains lower their temperature and thus take out the moisture that would otherwise fall in rain.

Our Wives.

Ruskin, in speaking of the wife, says:—"A judicious wife is always nipping off from her husband's moral nature little twigs that are growing in the wrong direction. She keeps him in shape by pruning. If you say anything silly, she will affectionately style you so. If you declare that you will do some absurd thing, she will find some way of preventing you from doing it. And by far the chief part of all the common sense there is in the world belongs unquestionably to women. The wisest things a man does are those which his wife counsels him to do. A wife is a grand wielder of the moral pruning knife. If Johnson's wife had lived there would have been no hoarding up of orange peel, no touching all the posts in walking along the street, no eating and drinking with disgusting velocity. If Oliver Goldsmith had been married he never would have worn that memorable and ridiculous coat. Whenever you find a man whom you know little about oddly dressed, talking absurdly or exhibiting eccentricity of manner, you may be sure that he is not a married man; for the corners are rounded off, the little shoots pared away in married men. Wives have much more sense than their husbands. The wife's advice is like the ballast that keeps the ship steady."

A Late Discovery.

The last paper which the late Jean Baptiste Boussingault communicated to the French Academy of Sciences, of which he was the senior member next to the centenarian Chevreul, was considered of the highest scientific importance. He took a quantity of sand from Fontainebleau, and by successive washings reduced it to a state of pure silica, in which he sowed some seed, which he sheltered from all contact with the air. When the plant had sprung up he removed it carefully and again washed the sand; the water was found to contain a leaven capable of swarming with living germs in favorable surroundings. This was an important experiment, for it demonstrated the existence of germs in any soil in which living vegetation has been developed. It also furnishes a decided factor in the problem relating to telluric and paludean miasma, and proves that water which has passed through any soil is capable of provoking fermentations and the swarming of bacteria in a given organism.

VARIETIES.

The son of a well-known New Yorker left the city last summer and went to India to make his home with an uncle who had grown rich in the Orient. Several months ago the family received a letter from the uncle saying that his nephew was dead, and the body had been embalmed and sent home by a sailing ship. Last week the vessel arrived here, and the young man's parents, attired in deep mourning, went to receive the remains. A peculiarly-shaped box was delivered to them and was removed to their home. When the undertaker opened the chest to give the parents a last look at the body it was found to contain a large Bengal tiger. The surprised father at once cabled to his brother in India: "Some mistake. George's body not arrived. Coffin contained Bengal tiger."

Last night the answer was received: "No mistake; George inside tiger."

Taking the Census.—"I have a scheme to make some money when the next census is taken in Dakota," said one Sioux Falls man to another.

"What is it?"

"Why, I'll make a proposition to the legislature to take the census of the towns at about $5 per town and make a whole barrel of money."

"Why, you couldn't make a cent at that rate."

"Couldn't, eh? Well, I know I could get rich at it. I can take the census of a town for fifty cents. You see, I'll give a man half a dollar to hitch up a sick horse and drive it out on the main street and let it lie down, and then after five minutes I'll get up and count 'em."

(Mrs. Howe had a "perfect treasure" sent from the "old country." The first month passes.) Treasure—No, ma'm, I find no fault with the char-woman, nor the bye that tinds the furnace; but the shtairs is very harrd, ma'm, as ye say yerself; me back is broke wid them. Mrs. Howe—Poor girl! Well, I think we shall take a flat in a month or two and let the house. (Three months later) Treasure—The washing is so heavy, ma'm, I'm afraid I'd not be able to take it anoder mont, with the t'ree fires to make every day. Mrs. Howe—Oh, I intend to put out all the washing and burn gas stoves in the parlor and dining-room. (Six months later.) Treasure—"Yer worruk, ma'm, is too hard for a delicate gurrl. I think I'll be lavin'. Mrs. Howe—Why, Treasure, what can I do to make it lighter for you? Treasure—Wall, ma'm, if ye was to send the slip of a gurrl to boarding skule, and yerself and the master take yer males out, and ye cud have mine sint in."

Farmer's Son—"Pap, I want to go to Cincinnati to live."

Pap—"What for, Samuel?"

"'Cause I read in a paper jist now that men there are makin' thousands of dollars jist by waterin' stock, and here I've been waterin' stock every winter fur half a dozen years or more and haint made a cent. What's the sense in me working for nothin' when I kin go to the city and git rich by wa'tering stock."

"Samuel, you aint got no sense. You don't know no difference between a four-legged stock and a railroad stock. I feel like whalin' you, as big as you are."

Samuel was too frightened to ask for an explanation, just then.

Wife—Cyrus, this is a pretty time for you to be coming in. It is half an hour past midnight. You have been at the club again, drinking.

Husband (with impressive gravity and maintaining his equilibrium with much effort)—M'ria, my dear, you do me injustice. I was caught on jury. Couldn't get off till a few minutes ago. Came straight home.

Wife—You are deceiving, me, Cyrus. Say memomandransanctificadubandanallelolipedonismically.

Husband (cautiously)—Certainly, my dear. Memoran—moran—bandanscat—(getting reckless and letting go all holds)—G'out o' my way, madam? 'f I cant get into my own house 'thout giving 'fernal password I'll resign as head o' this family. G'way!

In Mexican hotels the "chambermaid," who is usually a man, does the work about this way: He takes possession of the key, unlocks the door and disappears. After a while he comes back, turns down the bedclothes and goes off. The next time he comes in he partly completes the bed-making, but leaves in a great hurry, as if he had suddenly remembered something. After the sixth visit the Mexican retires with his dust brush, and it is pretty safe to wager he will only come back once more, and that to bring a clean towel. After he has done this for an hour or two, he is so worn out that he spends the rest of the day in taking a siesta.

There is a newspaper museum in Aachen, or Aix-la-Chapelle, Germany, whose directors are anxious to possess a a copy of every rare journal. They recently wrote a courteous letter to the editor of *L'Avenir du Tonkin*, the journal founded by the French in Hanoi after the conquest of Tonquin, requesting him kindly and out of collegiality to present two numbers to the museum. They received a letter of which the following is a translation: "Hanoi, January 14, 1887. To the manager of the Zeitungs-Museum, in Aix-la-Chapelle—I thank you for giving me an opportunity of making myself disagreeable to the Germans, and inform you that I refuse to send you the two numbers of *L'Avenir du Tonkin* which you wished to possess. Receive the assurance of my implacable hatred to the German race.—J. Cousin."

In the Quaker City.—A New York girl, visiting recently in Philadelphia, was taken to the opera by a young man, and at the close of the performance was asked to partake of some slight refreshment in the way of a supper. She accepted the invitation, and at the conclusion of the repast was somewhat astonished to see her escort reach for her pocket-book, which lay on the table at her side, and coolly pay the bill out of her money. This, it seems, is customary in Philadelphia when a young gentleman's means are somewhat limited. It relieves his lady friends of the embarrassment they might otherwise feel on partaking of any entertainment at his cost. It struck the New York girl, however, as being very ridiculous, and she began to laugh. "I fear you are laughing at my expense," said the young man, "let me explain." "Oh, no," she replied, "I was laughing at my expense."

A short time ago a middle-aged gentleman in Dublin presented an intelligent parrot to a Miss Angelina, whom he meant to marry. He is now being sued for breach of promise on account of the same bird. He knocked at his fiancee's door and the parrot said, "Come in." He went in, discovered a strange young man sitting on the sofa with the young lady, and then the parrot imitated a long string of kisses and laughed fiendishly. The match was declared off, and the young lady brings suit. She declares the parrot was wrong.

Great Man for the Place.—"Well, what kind of a man did you elect for commander?" was asked of the delegates who had just returned from a Grand Army Encampment.

"Splendid!" ejaculated the delegate with delight.

"What regiment did he belong to during the war?"

"None."

"None?"

"No, he didn't do any fighting during the war, but great Scott, man, you ought to hear him sing 'Marching Through Georgia!'"

Bishop Haven used to tell a story about his friend Dr. Newhall, at one time president of a college at Newark, Del. The Doctor was at one time very ill, and for some days he thought himself immortal and refused to take any food. The bishop visited him and tried to prevail upon him to take some nourishment. "No, I do not want anything," said he; "I am immortal. I am in Heaven. This is Heaven." Then pausing for a moment and looking at his visitor with a troubled air, he said: "But Haven, how in the world did you get here?"

There is a milkman at Brixton who has a ready wit that a lawyer might envy. One of his customers caught him watering his milk at a horse-trough the other day.

"What!" exclaimed the customer in a rage, "isn't it enough that your milk is full of typhoid without your going and watering it?"

The milkman turned round, and, smiling complacently, said to two or three bystanders:

"What can you do with a man like this? He actually wants his typhoid straight."

Man is 90 per cent water, and yet the Prohibitionists are not satisfied.

Chaff.

A matchless story—One which has no weddings.

Some mens vas always like der key hole on der back of a clock. Dhey vas behint time.

Kisses are the right kind of smacks to sail down the stream of life with, although taking a buss is not bad.

Gent (on the outlook for apartments)—How much do you want for this dog kennel? Landlord—If you don't bite, $10.

A woman who growls at a shad having so many bones about it doesn't often stop to realize how her own corset is built up.

It is remarkable how much more religious a person can be in a well-fitting dress and a love of a bonnet than a lot of dowdy old duds.

She—I don't see why women shouldn't make as good swimmers as men. He—Yes; but you see a swimmer has to keep his mouth shut.

"Papa," said a Baltimore miss to her father, "where do you catch red herrings?" "Oh, my dear," replied he, "in the Red Sea, to be sure."

Dr. Johnson, once speaking of a quarrelsome fellow, said: "If he had two ideas in his head, they would fall out with each other."

A fashion journal says there is a knack in putting on gloves. Come to think of it, that's so. You have to get your hand in, as it were.

Brown—Whose umbrella is that? It looks like one I lost. Smith—I don't see how it can, for I scraped the handle and altered it generally.

She—I like this place immensely since they have the new French chef. He—weak in his French but generous to a fault—Waitah, bring chef for two.

Husband—My dear, there's only one thing that this angel cake needs. Wife (who has offered him the result of the first attempt)—What is that, John? Husband—Wings.

A New Hampshire farmer got caught in a barbed wire fence and had to stay there for five hours. He confided to his hired man that he never got so tired of swearing in his life.

True happiness has jocosely been said to consist in finding that you have paid three dollars for an article exactly like that for which your friend had to pay three and a quarter the day before.

An inquiring man thrust his fingers into a horse's mouth to see how many teeth it had; and the horse closed its mouth to see how many fingers the man had. The curiosity of each was fully satisfied.

An Arkansas man made a bullet out of a piece of plug tobacco and shot it through the body of a wildcat. The animal died. Here we have another forcible illustration of the fatal effects of tobacco on the system.

Charley (to his pretty cousin, who is fishing)—Any bites yet, Maud? Maud—Only a nibble or two. Charley—What would you do, Maud, if you should make as good a "catch" as I am said to be? Maud—Throw it back in, Charley.

Applicant—Is this the place to apply for a pension? I am an old soldier, sir, and up to the present time I haven't asked the government to give me a cent. Now I want assistance. Pension Agent—You want a back pension? Applicant—Certainly; that's where I was shot.

She—How glorious the fresh breeze fills the sails, Mr. de Salt. He—Ya-as—the sails are full. She—And how resplendent the moon is, Mr. de Salt. He—Ya-as—the moon's full. She (getting tired)—Ah, do you know where the captain is, Mr. de Salt? He—Er—ya-as, below. He's full, too.

"I don't see why you can't keep awake in church," said the pastor. "I am there as long as you are and I don't have to sleep half the time." "O, well," replied the deacon, "you just sit down in the pew and let me preach and I'll bet a new organ you couldn't keep your eyes open ten minutes."

This has been found on the wall of a deserted shanty in the heart of Dakota. "Fore miles from a naber; sixteen miles from a postoffis; twenty-five miles from a raleroad; a hundred and atey from timber; half a mile from watter; God bless our home. We're going east to get a fresh start."

Rider Haggard, the author of "She," was recently in a bookseller's shop. A smartly-dressed lady entered and inquired for Mr. Haggard's books. She demurred at the price, remarking: "The fact is I am to meet the author at dinner to-night, and I want to read him up a bit, but he is not worth thirty shillings!"

ENSILAGE PRACTICALLY CONSIDERED.

BY O. B. POTTER, NEW YORK.

In reply to your inquiries, I have to say, I have been preserving fodder crops in ensilage pits, or silos, for more than ten years. My first experiment was in a very large hogshead, filled and buried in a bank of clay, which was allowed to remain one year before being opened. The success of the experiment was so convincing that I immediately commenced building silos, and have continued to use the process ever since with increasing satisfaction and advantage. I have for several years past preserved not less than 500 tons of green fodder a year in this way. I preserve corn, millet, rye, oats, clover and mixed grass, in which clover predominates; also the rowen, or last cutting from the meadow, when cut too late to be conveniently cured by drying. I consider corn in this latitude the most profitable crop for preserving in this way. In locations where the millets can be grown as easily as corn, this crop is undoubtedly an excellent one for ensilaging. In 1879, I raised a heavy crop of pearl millet upon a lot of four acres. In my absence, my farmer had permitted the millet to attain so large and hard a growth in the field that my cows wholly rejected the stalks, and would eat only the leaves, when the millet was offered them green. By way of experiment, I filled one silo with this millet, the bulk of the crop being fed to the cows, who only ate the leaves. To my surprise, the next spring, when this silo was opened, it was found excellent ensilage, and my cows ate it all, stalk and leaf, without the slightest waste. The yield from this large millet is greater per acre, I think, than can be obtained from corn; but the crop has seemed to me somewhat more exhausting to the land than corn, and I have not, therefore, continued raising it.

CONSTRUCTION.—My silos are constructed in masonry, the walls being either brick or faced with brick, and laid in cement. They are from eight to twelve feet wide and from ten to twenty feet deep—the deeper the better—and from sixteen to twenty feet in length. Success in preservation of the fodder depends very much upon its compactness and the exclusion of the air. In deep pits, the contents in the upper part of the silo by their weight compact the mass below, so that the deeper the pit the more complete will be the exclusion of the air and the nearer perfect the result. If any of the ensilage is found imperfect in a silo, it is always that nearest the top. A part of my silos are built entirely underground, and upon the shady side of my barn, and are arched over so that the top of the arch is about two feet below the surface of the ground. They are furnished with necks, coming up near the surface, through which the silos are filled, which necks, after the silos are filled, are sealed both in the body and over the tops of them with plank and earth, so as to entirely prevent air or water from entering. These silos are built in rows, end to end, with an opening or door in the cross wall, which is sealed up with plank and earth as each silo is filled. These doorways are successively opened as the contents of the silos are fed out one after another, and each silo remains hermetically sealed until the one in front of it has been fed and it is opened for feeding. I have also a number of silos in the basement of my barn and adjoining buildings, so built as to be conveniently filled from the first story of the building and to be protected by the building and its contents above from sun and heat. Such silos are built with heavy walls, so strong as to withstand the pressure of the mass, and with doorways, connecting with my stables in the basement floor, which are kept hermetically sealed with earth, except when being fed. I have found the silos built entirely underground to preserve their contents best and longest; but those built in basement stories, as I have described, answer an excellent purpose, and are nearly as good, besides being somewhat more convenient for feeding. I have tried silos built in my basement stables of studding and plank or boards and sealed upon the outside, between the studs and planking, with earth. They answer a good temporary purpose, but I have found them to decay rapidly, and to be unprofitable for this reason, and have abandoned them. The cost of silos will depend very much upon the quality and cost of material used, and, if built underground, upon the cost of excavation; but wherever built the masonry should be of the best kind and the mortar made of the best cement. Although I have never built silos of this material, I am satisfied, from considerable use of it in other structures, that concrete walls, built of clean broken stone and cement mortar, and smoothly finished upon their inner surfaces, would make excellent silos; and in locations where hard brick cannot be obtained at reasonable price I should advise this construction. According to my experience, the best time for ensilaging all crops except rye, is when they are at their greatest weight and before the leaves or extremities commence to dry or the grain commences to harden. Rye should be ensilaged as soon as the head commences to appear, otherwise the fiber of the stalk will become woody and the ensilage will be inferior. Clover should be ensilaged when in bloom, and before the leaves have commenced to wilt or die.

FILLING THE PITS.—The method of filling the pits will have to be varied according to the amount of the crop at any time ready for ensilaging and the number and size of the pits to be used for it. The method I have found most convenient and satisfactory, is to fill two or three pits about the same time, filling one and sealing it temporarily, taking care to tread the mass down as firmly as possible while filling, and then proceed with filling an adjacent pit in the same manner, and perhaps a third. I then reopen the first pit, when its contents will be found in a state of active fermentation, and fill it again to the top and seal it as before; and so with the second and third, filling each three or four times until its contents will settle no more, after which I seal up the necks permanently until the pit is opened for feeding. Not more than forty-eight hours should be allowed to elapse between successive fillings. Great care should be taken in the last filling of the underground pits that the material is packed in as thoroughly as possible under the arch, so that there will be as little space as practicable to be occupied by air after the final settling of the contents. The same method of filling the pits by successive fillings is followed in my basement pits inside the barn, but with these pits it will be found best to put a little freshly cut ensilage upon the top each day when practicable as they settle, until settling has ceased. This fresh material will prevent the contents in process of fermentation from becoming deteriorated by contact with the air. Ensilage should be cut not more than half an inch in length. I use for this purpose, with great success and satisfaction, the Ross Cutter.

COVERING OR WEIGHTING PITS.—My experience in covering or weighting pits has proved to me that underground pits, if filled and packed with proper care, require no covering or weighting at all. I have often carried the contents of these pits over one summer and fed them the second season, and in all cases have found the ensilage well preserved and equally good as if fed during the same year it was put down. The basement pits, which are, of course, open at the top, must be covered. I have found that simple earth, free from sand or gravel, is the best covering. This covering should not be less than one foot in thickness and should be thoroughly compacted or trodden down upon the top of the ensilage. The advantage of earth covering above any other, is that as the contents of the silo become settled, the surface will necessarily be left somewhat out of level in different portions of the silo. The earth covering accommodates itself to every inequality or depression and follows the settling of the contents so as to leave no vacant spaces for air between the covering and the contents. It presses upon every part of the silo equally. This covering should be freshly trodden down from time to time, and kept firmly upon the top of the ensilage, which is easily done and requires but little attention. This earth, when the pits are opened for feeding, will be thrown backward or off from the portion of ensilage which is being fed, and the ensilage will be found to be good and free from deterioration up to the lower surface of the earth. There is no waste whatever if proper care is used in removing the earth from the portion of the ensilage being fed. This earth may be advantageously used in the stalls of the cattle, or will be found an excellent absorbent in the manure pits or manure heaps. It is the cheapest, the cleanest, and the most effective covering which can be used for ensilage pits, according to my experience; and, if a proper thickness of earth is used, and the depths of the pits are made sufficient, no other weighting whatever is necessary. If unnecessary neatness is preferred in preventing the covering from contact with the ensilage, this may be secured by a layer, an inch or two in thickness, of cut straw, chaff, or any other convenient material to make the separation; but board or plank should not be used, because such covering will not accommodate itself to the uneven surface of the ensilage when settled, but will leave interstices or vacant spaces for air.

OPENING AND FEEDING.—Pits should not be opened until fermentation has ceased and the contents have become nearly or quite cool. When opened, the ensilage before feeding should be exposed for a short time—three or four hours—to the air. This is done by cutting down in the morning the ration to be used in the evening, and in the evening that to be used the succeeding morning; and allowing it to lie loosely at the mouth or upon the bottom of the pit, where the air will come in free contact with it until fed.

COST OF ENSILAGE.—I cannot state with accuracy the cost of ensilage per ton. It varies with each product, and with the yield in each season, and the labor expended in producing it. It may be safely said that ensilage will be found very much cheaper than hay or roots. According to my experience a farm upon which this process is intelligently practiced will keep twice the stock which the same farm will keep if the fodder is all cured and fed dry, as fed by our fathers; and the labor in securing and preserving this crop is not greater, but, in my judgment, considerably less than that of raising, curing and preserving the same amount of fodder by the old method of drying. I keep upon my farm about 150 cows and 75 to 100 growing heifers. I could not keep one-half this stock upon the same land except by the practice of ensilage. I almost invariably cut two ensilage crops a season from the same land; and of clover I have repeatedly ensilaged three successive crops the same season.

ENSILAGING CORN STALKS AFTER HUSKING.—During the last four years, I have practiced a new method of harvesting corn, of which I raise from 25 to 40 acres a year. I had previously cut the corn up by the roots, stooked, cured and husked it in the ordinary way from the stalk, and then stacked or stored the stalks in the barn, cutting them up and feeding them dry, or moistened, in winter. By the new method, I husk directly from the standing corn in the field as soon as the corn is dry enough to permit this. The corn when husked is spread to the depth of about twelve inches upon slatted floors or shelves inside my buildings, placed one above the other and about three feet apart, the air passing freely under and over these floors and through the corn. As fast as the corn is husked, the stalks are cut up close to the ground and cut immediately into the ensilage pits, the cutting and filling proceeding in the method before described. The juice remaining in the stalk in the undried portions of the leaves, and in the thicker leaves, is sufficient to establish active fermentation, and the whole mass settles and compacts so as to be perfectly preserved as ensilage. If the corn is very dry before husking, the stalks when cut up may be moistened with water to secure perfect fermentation and settlement of the mass.

When the husking is complete, the stalks are in the ensilage pit and ready for feeding. This ensilage, although not as rich as that made from stalks before the grain has become hardened, I find better either for milch cows or dry stock than the same weight of fair hay; and this ensilage is eaten by the cattle without one particle of waste. Every part of it is eaten eagerly. From my experience, I am of the opinion that the profit of the corn crop to the farmer will be found to be considerably increased by the adoption of this method of harvesting. The labor required for gathering and ensilaging these stalks in the manner I have described, is very much less, I think not more than half, than that required for binding, stooking, preserving and cutting up and feeding dry as hitherto practiced, while the value of the stalks preserved as ensilage in the way I have described, is, in my judgment, quite doubled. I have no doubt that the State of Illinois by the practice of this method, without diminishing, but rather increasing, its yield of corn, would nearly double its capacity for growing and feeding cattle, especially in winter. It will be important in practicing this method to take care that husking commences early, and that fields are husked successively in the order of their being planted, so that each be husked at its proper maturity and before becoming unnecessarily dry. Corn cured in the manner I have described, will be found brighter than that which is allowed to remain upon the stalk in the field completely dried, and will be equally as heavy, while a considerable percentage of ears now lost or injured by falling upon the ground will be saved.

HEALTH AND CONDITION OF THE STOCK.—I know no fodder equal to ensilage for keeping stock in perfect health and fine condition. It increases the flow of milk in cows from 15 to 20 per cent. at least; and cows kept by this process when through milking are always excellent beef. I have found growing heifers to thrive and do better upon ensilage than upon any other food; and I could not advantageously raise heifers except by the use of ensilage. I have never had an animal become sick or out of health in any degree from the use of this food; but on the contrary, since its introduction and use, my cattle have been much more uniformly healthy, thriving and profitable than before.

CONCLUDING OBSERVATIONS.—It must be borne in mind always that silos will not yield for feeding anything better than what they are filled with. If filled with rye, they will not yield clover ensilage. They will yield the same material with which they are filled and in the best condition for food of cattle if filled and secured with proper care. It must also be borne in mind that quadrupeds, as well as bipeds, require a variety of food to maintain the best health and condition. They should not be fed upon ensilage alone. A proper amount of meal should be fed with the ensilage every day, especially to milch cows and stock being fattened. For growing stock, meal fed with the ensilage, especially oat meal or barley meal, will be found most useful and profitable. Nor will ensilage supersede wholly the use of good hay. I give to my stock usually one ration of hay each day, and to my milking stock from two to three quarts of meal each day, fed with ensilage.

From my experience, I cannot doubt that when the preservation of green crops by ensilage shall become thoroughly known and practiced throughout the country, it will largely increase the profit and the pleasure and success of agriculture. It will enable the whole Southern portion of our country below the line of tame grasses to raise its own cattle and make its own beef without dependence upon any other section. It will greatly increase the products and profitableness of agriculture in the vast west. It will enable farmers in New England and the northeastern portion of the country to increase the profits of their farms by greatly increasing their productiveness in proportion to the labor expended. I confess that I am somewhat of an enthusiast upon this subject, but my enthusiasm has grown steadily by actual experience from my first experiment, made more than ten years ago.

THE *Farming World*, of Edinburg, Scotland, in an article on breeding, says: "Like produces like. The tailless breed of Manx cats was only produced by persistently amputating the tails of all kittens, until there was not left upon the island a tail to reproduce another one." All good in theory, perhaps, but facts are stubborn things. Here are breeders of Merino sheep who have been "persistently amputating" the tails of their sheep for centuries, but we have never heard it asserted that the tails have become shorter or fewer in number in consequence. Regarding Manx cats—a breed of tailless cats on the Isle of Man—it is easy to assert they once had long tails, but it would be difficult to prove it. From the time when first mention was made of them they have been short-tailed, and probably always were. It will be time enough to accept such theories when they are substantiated by actual facts, and certainly facts are against this theory regarding the tails of animals.

THE Illinois Legislature has passed what is known as the Anti-Boycotting, Anti-Blacklisting bill, and it is an important addition to the criminal law of that State. It provides that if two or more persons conspire, or the officers or executive committee of any society or organization or corporation shall issue or utter any circular or edict as the action of or instruction to its members, or any other persons, societies, organizations, or corporations, for the purpose of establishing a so-called boycott or blacklist, or shall post or distribute any written or printed notice in any place with the fraudulent or malicious intent wrongfully and wickedly to injure the person, character, business employment, or property of another, they shall be deemed guilty of conspiracy and punished accordingly. The penalty is "not to exceed five years in the penitentiary or a fine not exceeding $2,000, or both." This law is intended to put an end to the persistent and malicious efforts of organizations, either of employers or employes, to cripple or ruin whoever may incur their displeasure, and is both wise and timely.

A $50,000 Suit Pending.

The Newark Machine Co., of Columbus, O., owners of the patents of the "Imperial" Automatic Swinging Straw Stacker, have brought suit in the United States Court of Chicago this week, against W. T. Shell, of Polo, Ills., and Davis Luthy & Co., of Peoria, Ills., in the sum of $25,000 each, for building and offering for sale "Imperial" Automatic Swinging Straw Stackers that the Newark Machine Co. claim are infringing the patents belonging to them. It would be well for dealers and threshmen to beware of spurious made Stackers.

We never fully appreciate how much subdued humility there can be found in a man until we see him playing dominoes with his mother-in-law.

Veterinary Department

Conducted by Prof. Robert Jennings, Veterinary Surgeon. Professional advice through the columns of the Michigan Farmer to all regular subscribers Free. The full name and address will be necessary that we may identify them as subscribers. The symptoms should be accurately described to ensure correct treatment. No questions answered professionally by mail unless accompanied by a fee of one dollar. Private address, No. 201 First St., Detroit, Mich.

Non-Contagious, Cuticular Disease in a Mare.

OWOSSO, June 17.

Veterinary Editor of the Michigan Farmer.

We have a brood mare 12 years old, that has been troubled with a skin difficulty for nearly two years past, and have tried all the remedies we know of, and failed to eradicate it. There are spots from the size of a 25 cent piece to as big as your two hands; where the hair is off the cuticle is rough, stiff and harsh to the touch. These places crack open more or less, and a little fluid oozes out. We heal them up but they don't stay so. The spots increase in size gradually. We have treated her eczema same as in human beings, using preparation of arsenic. She is in fine order, hair looks good, and seems otherwise in perfect health. She is raising a colt and runs with other stock, but does not impart it. Can you prescribe for her?

SUBSCRIBER.

Answer.—The trouble with your mare is one of the many varieties of cutaneous diseases to which horses, cattle, and other animals are subject, the effect, probably, of some constitutional disturbance. With the symptoms so briefly described, we are unable to make a satisfactory diagnosis. We therefore will prescribe upon general principles. Give the following: Socotrine aloes, pulv., two ounces; nitrate of potassa, pulv., one ounce; Jamaica ginger root, pulv., one ounce; mix all together and divide into twelve powders; give one in the feed, or on the tongue, night and morning. Wash the diseased portions of the skin with castile soap and water; then apply the following once a day. sulphate zinc, half an ounce; rain water, one pint; glycerine, four ounces, mix all together. Apply with a piece of sponge.

Goitre in a Colt.

ORLEANS, June 16, 1887.

Veterinary Editor of the Michigan Farmer.

I have a young colt foaled in April which has two bunches in its throat about as large as a robin's egg. Can't say if they were there when dropped or not. I noticed them about two weeks ago. Can there be anything done to remove them? Please answer through the FARMER and oblige,

HARRISON CRANE.

Answer.—The "bunches" in the throat of your colt are enlargements of the thyroid glands. In an animal so young it may be regarded as hereditary. They are an eye sore, but rarely cause any inconvenience to the animal, and treatment is very uncertain. They may be removed with the knife in the hands of a skilled surgeon; but the operation is a dangerous one. Apply strong tincture of iodine, once a day to the enlargements until the skin is irritated, then discontinue its use. In a few weeks, if necessary, the application may be repeated.

Commercial.

DETROIT WHOLESALE MARKET.

DETROIT, June 20, 1887.

FLOUR.—The market shows little change, and is quiet and steady. Quotations are as follows:

Michigan, stone process	$3 50 @3 75
Michigan roller process	4 00 @4 15
Michigan patents	4 50 @4 65
Minnesota, bakers	4 00 @4 25
Minnesota, patents	4 65 @4 85
Rye	3 25 @3 40
Low grades	2 50 @3 00

WHEAT.—After the flurry succeeding the breaking down of the Chicago "corner" the market has settled down to steady business, and at the close of the week showed signs of firming up, and spot quotations on No. 1 white and No. 2 red were advanced. Late futures rule weak, and are likely to do so as long as the present favorable conditions for the new crop continue. Latest quotations were as follows: Spot—No. 1 white, 84c; No. 2 red, 84½c; No. 3 red, 81c. Futures—No. 2 red, June, 84½c; July, 80c; August, 79⅝c. No. 1 white, June, 83⅜c.

CORN.—Market dull and lower. No. 2 is quoted at 38⅜c for spot, with no speculative inquiry.

OATS.—The market shows little change; No. 2 white quoted at 32½c, and No. 2 mixed at 30c for spot, closing dull.

BARLEY.—The market is dull. No. 2 State is quoted at $1 10@1 15 ℔ cental.

RYE.—Quoted at 50@52c ℔ bu., with a quiet market.

FEED.—Bran quoted at $12 25@12 50 per ton, coarse middlings at $12 00@12 50, and fine do at $12 50@14 00 ℔ ton.

BUTTER.—Receipts lighter, but market still depressed and lower than a week ago. Dairy quoted at 11@12c for good to choice, with a cent or two more sometimes paid for fancy. Creamery quiet at 16@18c ℔ ℔. Stocks of all kinds quite large.

CHEESE.—Values have declined during the week, and the market is quiet at the following range: Michigan full creams, 8½@9c; New York, 9@9½c; Ohio, 6½@7½c.

EGGS.—Fresh command 13@13½c ℔ doz. Receipts large and the market dull.

FOREIGN FRUITS.—Lemons, Messinas, ℔ box, $3 25@3 75; oranges, Messinas, ℔ box, $3 50@3 75; cocoanuts, ℔ 100, $5 00@5 50; bananas, yellow, ℔ bunch, $2@3; red, $1 50@2; Pine apples ℔ doz., $1 50@2 75. Figs, 11@12c for layers, 12@14c for fancy.

BEESWAX.—Steady at 25@30c ℔ ℔., as to quality.

HONEY.—Quoted at 8@11c ℔ ℔. for comb, and 6@9c for extracted. Market quiet.

BEANS.—Nothing doing and quotations nominal at $1 75@1 80 ℔ bu. for city picked mediums and 80c@$1 25 for unpicked.

DRIED APPLES.—Market quiet at 6@7c for common, and 14@15c for evaporated. Very little doing.

MAPLE SYRUP.—Per gallon can, 90c@$1.

MAPLE SUGAR.—Quoted at 9c per lb. The demand light.

SALT.—Michigan, 75@80c per bbl. in car lots; eastern, 85c; dairy, $2 10 per bbl.; Ashton quarter sacks, 72c.

POTATOES.—New Southern easy at $4 75@5 00 ℔ bbl, with the tendency downward. Old quoted at 85@90c ℔ bu.

ONIONS.—Bermudas offered at $1 25@1 50 ℔ bu. crate. New Southern quoted at $3@3 25 ℔ bbl. Fair supply.

POULTRY.—Market rules firm. Quoted as follows: Live, ℔ ℔., roosters, 5½@6c; hens, 8½c; turkeys, 9@9½c; ducks, 8@8½c; spring chicks, 14c; ℔ pair, pigeons, 25c; spring ducks, 40@60c.

HIDES.—Green city, 6c ℔ ℔., country, 6½c; cured, 7½@8c; green calf, 8c; salted do, 9c; sheep-skins, 50c@$1 50; bulls, stag and grubby hides ⅓ off.

FRUIT.—Strawberries were offered in large quantities this week, and the market was frequently overstocked. At the close the supply is lighter, and quotations are $2 50@3 50 ℔ stand, the latter for fine stock. Raspberries are scarce as yet, and held at $3 for 24 quart case of black. Plums quoted at $1 25@1 50 ℔ third bu. box, for Wild Goose. Peaches are firmer at $1 25@1 50 for third bu. boxes. Cherries are quoted at $2 50@3 00 ℔ bu. for sour, and 75c@$1 00 for 10 quart baskets of sweet. Gooseberries are dull at $5@5 50 ℔ stand. Apricots are offered at $1 75@2 00 ℔ case. The quality of the fruit offering this season is much finer than usual.

TOMATOES.—Quiet at $1 25@1 50 ℔ ½ bu box, and $2 00@3 ℔ bu.

VEGETABLES.—Dealers quote prices as follows: Per doz bunches, Canadian radishes, 20@25c; onions, 20@25c; pie plant, 20@25c. Per doz, cucumbers, 45@50c. Per bu, spinach, 20@25c; green peas, $1 00; string beans, $1 75@2. Per dozen bunches, parsley, 30@35c, asparagus, 50@55c. Per 2 bbl crate, cabbage, $3 25@3 75. Per ⅓ bu box, wax beans, $2 05@$2 50. Per doz, summer squash, 50@75c; egg plant, $1@1 25; cauliflower, $1 25@1 50.

WATERMELONS.—Quoted at $40@50 ℔ 100.

PROVISIONS.—Market quiet and steady with few changes during the week. Quotations here are as follows:

New mess	$15 25 @15 50
Family	15 00 @15 25
Short clear	17 00 @17 25
Lard in tierces, ℔ ℔	6⅜@ 6⅝
Lard in kegs, ℔ ℔	6¾@ 7⅛
Hams, ℔ ℔	11⅛@ 11¾
Shoulders, ℔ ℔	7 @ 7½
Choice bacon, ℔ ℔	9¾@ 10
Extra mess beef, per bbl	7 50 @ 7 75
Tallow, ℔ ℔	3¼@

HAY.—The following is a record of the sales at the Michigan Avenue scales for the past week, with prices per ton:

Monday—6 loads: Two at $12 50 and $12; one at $13 50 and $11.

Tuesday—18 loads: Nine at $13; four at $12; two at $14; one at $13 50, $11 50 and $11.

Wednesday—9 loads: Three at $12; two at $14; one at $15, $14, $12 50, $11 and $10.

Thursday—20 loads: Six at $12; four at $13; three at $10; two at $15, $14 and $11; one at $13 50.

Friday—14 loads: Five at $13; three at $12; two at $14 and $11; one at $11 50 and $8.

Saturday—2 loads: One at $14 and $13.

LIVE STOCK MARKETS.

At the Michigan Central Yards.

Saturday, June 18, 1887.

CATTLE.

The offerings of cattle at these yards numbered 575 head, against 718 last week. The market opened up active for fair to good butchers' cattle, and prices on this class were fully as high as those of one week ago. Thin butchers' cattle, stockers and heavy shipping steers were dull and a shade lower. The following were the closing

QUOTATIONS:

Extra graded steers, weighing 1,300 to 1,450 lbs	$4 25@4 50
Choice steers, fine, fat and well formed, 1,100 to 1,300 lbs	3 75@4 00
Good steers, well fatted, weighing 950 to 1,100 lbs	4 25@4 50
Good mixed butchers' stock—Fat cows, heifers and light steers	3 50@4 00
Coarse mixed butchers' stock—Light thin cows, heifers, stags and bulls	2 75@3 25
Stockers	3 00@3 25
Bulls	2 75@3 25

C Roe sold John Robinson a mixed lot of 18 head of good butchers' stock av 946 lbs at $3 70, and 5 thin ones av 828 lbs at $3 20.

O'Hara sold Sullivan & F 2 fair butchers' steers av 885 lbs at $3 90, and 2 thin heifers and a bull to H Robinson av 610 lbs at $2 60.

Adams sold Fitzpatrick a mixed lot of 7 head of good butchers' stock av 977 lbs at $3 70.

C Roe sold John Robinson a mixed lot of 19 head of good butchers' stock av 965 lbs at $3 70; 3 thin cows av 1,053 lbs at $3, and a bull weighing 560 lbs at $2 50.

Newman sold John Robinson a mixed lot of 17 head of good butchers' stock av 881 lbs at $3 70, and a bull weighing 1,050 lbs at $3 25.

Stevenson sold John Robinson 3 good cows av 1,156 lbs at $3 50.

Gleason sold Caplis a mixed lot of 9 head of good butchers' stock av 976 lbs at $3 65, and 3 stockers to Sullivan & F av 556 lbs at $2 60.

Coats sold Sullivan & F 23 feeders av 1,119 lbs at $3 65.

C Roe sold John Robinson a mixed lot of 21 head of good butchers' stock av 918 lbs at $3 75; 8 fair ones av 790 lbs at $3 50, and 5 coarse ones av 632 lbs at $2 50.

Aulls sold Phillips & Wreford a mixed lot of 24 head of good butchers' stock av 870 lbs at $3 90.

Coats sold H Robinson a mixed lot of 20 head of fair butchers' stock av 784 lbs at $3 40.

Switzer & Ackley Phillips & Wreford a mixed lot of 9 head of fair butchers' stock av 907 lbs at $3 55.

Bliss sold Sullivan & F a mixed lot of 15 head of fair butchers' stock av 850 lbs at $3 40 and 5 coarse ones av 950 lbs at $2 80.

Capwell sold Caplis a mixed lot of 10 head of fair butchers' stock av 891 lbs at $3 50 and 4 thin cows av 1,087 lbs at $3.

Merritt sold Caplis 8 good butchers' steers av 1,060 lbs at $4 35.

Coats sold Sullivan & F 4 stockers av 567 lbs at $2 60.

Bement sold Caplis a mixed lot of 13 head of fair butchers' stock av 777 lbs at $3 40 and 2 thin cows av 1,075 lbs at $3.

Barbour sold Sullivan & F a mixed lot of 6 head of fair butchers' stock av 826 lbs at $3 50.

Adams sold Kraft 4 choice butchers' steers av 1,110 lbs at $4 50.

McMullen sold Fitzpatrick a mixed lot of 24 head of fair butchers' stock av 864 lbs at $3 40.

Purdy sold John Robinson a mixed lot of 22 head of fair butchers' stock av 815 lbs at $3 40.

Bordine sold Caplis 4 good butchers' steers av 1,160 lbs at $4 20, and 3 fair ones av 933 lbs at $3 70.

SHEEP.

The offerings of sheep numbered 562 head against 746 last week. The receipts were about the poorest lot that we have ever had in the Yards, and could only be classed as culls. However sheep were wanted and buyers took what was offered, and paid good prices for them.

Bliss sold Fitzpatrick 38 av 63 lbs at $3 25.

Rupert sold Fitzpatrick 121 av 69 lbs at $3 50.

Barbour sold Monahan 91 av 71 lbs at $3 30.

Stevenson sold John Robinson 123 av 68 lbs at $3 20.

Cullen sold Young 65, part lambs, av 76 lbs at $4.

Capwell sold John Robinson 13 av 77 lbs at $3 60.

C Roe sold John Robinson 72 av 69 lbs at $3 10.

Merritt sold John Robinson 54 av 82 lbs at $3 25.

HOGS.

The offerings of hogs numbered 420 head, against 487 last week. The hog market opened up at an advance of 10@15 cents over the rates of last week, ruled steady and closed firm.

Cullen sold Rauss 13 av 163 lbs at $5 10.

O'Hara sold Rauss 35 av 176 lbs at $5 15.

Barbour sold Rauss 9 av 209 lbs at $5 10.

Bement sold Rauss 10 av 180 lbs at $5.

Switzer & Ackley sold Webb Bros 31 av 258 lbs at $5 05.

Capwell sold Rauss 20 av 186 lbs at $5 10.

C Roe sold Webb Bros 86 av 190 lbs at $5 15.

Stevenson sold Monahan 12 av 141 lbs at $5.

Sebring sold Webb Bros 64 av 241 lbs at $5 10.

C Roe sold Webb Bros 64 av 217 lbs at $5 20 and 16 av 238 lbs at $5 15.

O'Hara sold Rauss 60 av 182 lbs at $5 15.

King's Yards.

Saturday, June 18, 1887.

CATTLE.

The market opened at these yards with 608 head of cattle on sale. Of this number eleven car loads of westerns were included, all but two loads of which were consigned to dealers. The market opened up with a good demand for the better grades of butchers' cattle, and for these strong last week's prices were paid. Common cattle, which came in competition with the western cattle were a little weak, and in some cases sold a shade lower. The offerings all changed hands and the market was steady at the close.

Langshear sold McGee 5 thin cows av 1,002 lbs at $3.

Estep sold Wreford & Beck a mixed lot of 9 head of good butchers' stock av 952 lbs at $3 75.

Holmes sold J Wreford 10 fair heifers av 789 lbs at $3 75, and 2 thin ones av 780 lbs at $3 25.

Beardslee sold Reagan a mixed lot of 5 head of coarse butchers' stock av 500 lbs at $2 60.

Seeley sold Kammon 5 good butchers' steers av 1,024 lbs at $4.

Hall sold Davy a mixed lot of 9 head of fair butchers' stock av 755 lbs at $3 50.

Beardslee sold McGee a mixed lot of 16 head of fair butchers' stock av 830 lbs at $3 40, and a bull weighing 870 lbs at $2 75.

Plotts sold Reagan a mixed lot of 20 head of thin butchers' stock av 809 lbs at $3 30, and a thin cow weighing 810 lbs at $3.

Hall sold Marx 9 good butchers' steers av 995 lbs at $4.

Holmes sold Knoch 5 good butchers' steers av 990 lbs at $4 20.

Bresnahan sold Cross 5 thin cows av 940 lbs at $3 0.

Parker sold Genther 5 good butchers' steers 970 lbs at $4 20 and 3 heifers to Stickel 886 lbs at $3 95.

Culver sold Loosemore a mixed lot of 12 head of fair butchers' stock av 870 lbs at $3 60 and 6 to Davey av 890 lbs at $3 40.

Simmons sold Kammon a mixed lot of 6 head of good butchers' stock av 890 lbs at $3 65.

Flieschman sold Orlong 4 good heifers av 845 lbs at $4.

Wietzel sold Hersch 6 choice butchers' steers av 1,048 lbs at $4 40.

Evans sold Flieschman a mixed lot of 14 head of fair butchers' stock av 850 lbs at $3 50.

Walls sold Marx 5 fair butchers' steers av 1,008 lbs at $3 75.

Astley sold Kammon a mixed lot of 17 head of thin butchers' stock av 806 lbs at $3 30 and a bull weighing 910 lbs at $2 50.

Sprague sold Billkofski 4 choice butchers' steers av 985 lbs at $4 40.

Newton sold Prindle 3 thin heifers av 636 lbs at $3 25.

Walls sold H Roe a mixed lot of 6 head of fair butchers' stock av 725 lbs at $3 25.

Purdy sold Marshick a mixed lot of 6 head of fair butchers' stock av 700 lbs at $3 45 and 2 good butchers' steers to Brooka av 1,160 lbs at $4 25.

Wietzel sold Kolb a mixed lot of 10 head of good butchers' stock av 825 lbs at $3 75 and 7 thin ones to Marx av 920 lbs at $3 25.

Stonehouse sold Prindle a mixed lot of 6 head of fair butchers' stock av 718 lbs at $3 50.

Purdy sold Stickel a mixed lot of 7 head of fair butchers' stock av 933 lbs at $3 50, and 2 good cows av 990 lbs at $3 25.

Flieschman sold Meyers a mixed lot of 6 head of fair butchers' stock av 798 lbs at $3 60.

Newton sold McGee 4 fair cows av 1,147 lbs at $3 15.

Butler sold McGee a mixed lot of 13 head of thin butchers' stock av 878 lbs at $3 20.

Purdy sold Stonehouse a mixed lot of 6 head of fair butchers' stock av 821 lbs at $3 50.

Flieschman sold McGee a mixed lot of 8 head of thin butchers' stock av 883 lbs at $3 35.

Wreford & Beck sold Kelly 27 mixed westerns av 666 lbs at $3 25.

Sullivan & F sold Marx 26 mixed westerns av 744 lbs at $3 10.

SHEEP.

The offerings of sheep numbered 655 head. Sheep were in good demand, but the quality was inferior, and as a general thing the prices paid were low, but comparatively high for the quality.

Estep sold Wreford & Beck 58 av 79 lbs at $4.

Payne sold Morey 104 av 81 lbs at $3 75 and 10 av 74 lbs at $3.

Pierson sold Plotts 130 av 65 lbs at $3 50.

Webb sold Morey 50 av 86 lbs at $4, and 55 to Cross av 67 lbs at $2 80.

Purdy sold Andrews, 85 part lambs, av 67 lbs at $4.

Sprague sold Andrews 36, part lambs, av 73 lbs at $4.

Plotts sold Loosemore 129 av 65 lbs at $3 10.

Page sold Morey 103 av 79 lbs at $3 50.

Sweet sold Andrews 95 av 77 lbs at $3 90.

Vanbuskirk sold Fero 80 av 76 lbs at $3 25.

HOGS.

The offerings of hogs numbered 245 head. The demand for hogs was active, and the light receipts were closed out at an advance of 10 cents over last week's prices.

Estep sold Rauss 10 av 218 lbs at $5.

Payne sold Kuner 8 av 140 lbs at $5.

Page sold Rauss 14 av 175 lbs at $5 10.

Simmons sold R S Webb 18 av 190 lbs at $5.

Sweet sold Brooka 9 av 111 lbs at $5.

Purdy sold Kune 11 av 130 lbs at $5.

Vanbuskirk sold R S Webb 16 av 222 lbs at $5.

McHugh sold Huyser 13 av 186 lbs at $5 15.

Sprague sold Huyser 17 av 175 lbs at $5 15.

Astley sold Rauss 21 av 182 lbs at $4 75.

Buffalo.

CATTLE.—Receipts, 10,626 against 6,350 the previous week. The offerings of cattle on Monday consisted of 140 car loads. The market ruled fairly active, and about all the butchers' and shipping cattle were closed out at prices about the same as those of the previous Monday, or a shade higher than Saturday's rates. Sales of good 1,350 to 1,500 lb steers were made at $4 70@5; good 1,200 to 1,300 lbs at $4 50@4 65; fair to good 1,050 to 1,150 lbs at $4 15@4 40, and light butchers' steers at $3 75@4 15. Common to good mixed butchers' stock sold at $3 25@4 30, and stockers at $3 25@3 55. There were no fresh receipts on Tuesday, and the only offerings were some half fat grassy stock and old cows. The latter are very hard of sale, and trading in them is at rates 15@20 cents lower than one week ago. On Wednesday and Thursday the offerings were light and but little demand. Friday's market showed no particular change, and on Saturday the market showed a general decline of 15@25 cents from the prices of the Monday previous, closing at the following

QUOTATIONS:

Extra Beeves—Graded steers, weighing 1,300 to 1,450 lbs	4 55@4 75
Choice Beeves—Fine, fat, well-formed steers, weighing 1,300 to 1,400 lbs	4 25@4 50
Good beeves—Well-fattened steers weighing 1,200 to 1,350	4 15@4 25
Medium Grades—Steers in fine flesh, weighing 1,100 to 1,200 lbs	4 00@4 15
Light Butchers'—Steers averaging 850 to 1,100 lbs, of fair to good quality	3 75@4 25
Butchers' Stock—Inferior to common steers and heifers, for city slaughter, weighing 900 to 1,000 lbs.	3 25@3 65
Michigan stock cattle, common to choice	3 25@3 55
Michigan feeders, fair to choice	3 75@4 00
Fat bulls, fair to extra	3 00@3 75

SHEEP.—Receipts 35,200, against 26,200 the previous week. The market opened up on Monday with 40 car loads of sheep on sale. Trading was slow and prices 10@15 cents lower than on Saturday. Culls and common sheep sold at $2@3 75; fair to good, 75 to 80 lbs, $3 90@4 15; good to choice, 85 to 90 lbs, $4 20@4 30; good 95 to 105 lbs, $4 30@4 40; extra 110 to 120 lbs, $4 35@4 40; fair to extra lambs, $4@5. There was nothing done on Tuesday, and on Wednesday with 5 loads on sale, prices advanced 10@15 cents. The supply was light on Thursday and Friday, the market ruling steady. On Saturday the receipts were 9,400. The market ruled steady for the best grades, but dull and a shade lower for common, culls and common sheep selling at $2@3 90; fair to good 75 to 80 lb sheep, $4 10@4 20; 85 to 90 lb, $4 30@4 40; good 95 to 105 lb, $4 40@4 50; 110 to 120 lb, $4 40@4 50; lambs, fair to extra $4@4 90.

HOGS.—Receipts 35,200, against 26,200 the previous week. The supply of hogs on Monday was made up of 60 car loads. The market steady at closing prices of Saturday and ruled steady. Good to choice Yorkers, $5 15@5 25; fair do, $5@5 10; medium weights, fair to choice, $5 20@5 35; good to choice heavy, $5 30@5 35; pigs, $4 90@5 05. There was nothing done on Tuesday. On Wednesday there were 10 loads on sale. The demand was active and prices 10 cents higher. The market ruled steady on Thursday and Friday, and on Saturday the market ruled steady with prices unchanged. Good to choice Yorkers sold at $5 15@5 25; fair do, $5 10@5 15; medium weights fair to choice, $5 15@5 30; good to extra heavy, $5 30@5 35; pigs, $4 75@5.

Chicago.

CATTLE.—Receipts 51,703, against 43,892 last week. Shipments 15,809. The offerings of cattle on Monday numbered 11,563 head. The market opened up with a rather light demand and prices 10 cents lower than on Saturday, and at the close a good many were left over. Extra steers were quoted at $4 85@5; choice to fancy, $4 35@4 80; fair to good butchers' steers, $3 80@4 30, and inferior to good cows at $2@3 25. The receipts were large again on Tuesday and prices 5@10 cents lower. On Wednesday another 5 cents was taken off most grades, and 5@10 cents more on Thursday, ruling weak on Friday. The market on Saturday ruled slow and steady, closing at the following

QUOTATIONS:

Prime beeves	$4 60@4 85
Choice to fancy shipping, 1,350 to 1,600 lbs	4 20@4 55
Fair to choice shipping, 1,200 to 1,400 lbs	4 00@4 45
Common to good shipping, 1,050 to 1,250	3 80@4 30
Poor and medium steers, 950 to 1,100 lbs	3 70@4 30
Fair to choice cows	2 60@3 25
Inferior to medium cows	2 00@2 60
Poor to choice bulls	2 65@3 75
Stockers, 550 to 800	2 40@3 25
Feeders, 875 to 1,150	3 40@3 90

HOGS.—Receipts 109,171, against 97,248 last week. Shipments 22,451. The market opened up on Monday with 27,904 hogs on sale. Early sales were made at Saturday's prices, but before the close there was a decline of 5 cents. Poor to prime light sold at $4 70@5 10; inferior mixed to choice heavy, $4 75@5 25; skips and culls, $3 25@4 60. On Tuesday prices advanced 5@10 cents, but this advance was lost on Wednesday, the receipts being 22,000. The market on Thursday was slow and 5@10 cents lower; advanced 5 cents on Friday, closing on Saturday at a decline of 5@10 cents. Poor to prime light sold at $4 80@5 10; inferior mixed to choice heavy, $4 75@5 10; skips and culls, $3 25@4 60.